AD NUMBER ADC033491 LIMITATION CHANGES TO: Approved for public release; distribution is unlimited. FROM: Distribution: Further dissemination only as directed by Chemical Systems Laboratory, Army Armament Research and Development Command, Aberdeen Proving Ground, MD 21010, 28 NOV 2001, or higher DoD authority. This document contains export-controlled technical data. **AUTHORITY** ECBC memo dtd 18 Feb 2016

AD NUMBER

ADC033491

CLASSIFICATION CHANGES

TO: unclassified

FROM: confidential

LIMITATION CHANGES

TO:

Distribution: Further dissemination only as directed by U.S. Army Armament Research and Development Command, Aberdeen Proving Ground, MD, 21010, 28 Nov 2001, or higher DoD authority.

FROM:

DoD Controlling Office: US Army Armament Research and Development Command, Chemical Systems Lab., ATTN: DRDAR-CLJ-IR, Aberdeen Proving Ground, MD 21010.

AUTHORITY

USASBC, DA Form 1575, 28 Nov 2001; USASBC, DA Form 1575, 28 Nov 2001

CONFIDENTIAL





US Army Armament Research and Development Command Aberdeen Proving Ground, Maryland 21010

SPECIAL PUBLICATION ARCSL-SP-83015

PHYSICAL PROPERTIES OF STANDARD AGENTS, CANDIDATE AGENTS, AND RELATED COMPOUNDS AT SEVERAL TEMPERATURES (U)

by

John B. Samuel Elwin C. Penski John J. Callahan

Chemical Branch Research Division

June 1983

CLASSIFIED BY: MIDECLASSIFY ON: O

Multiple Sources

OADR

TO A DE

S PEB 9 1984

DTIC FILE COPY

CONFIDENTIAL 84 02



Disclaimer

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

Disposition

When this report is no longer needed, Department of the Army organizations will destroy it as prescribed by AR 380-5. Navy and Air Force elements will destroy it in accordance with applicable directions. Department of Defense contractors will destroy the report as prescribed by paragraph 19 of the Industrial Security Manual for Safeguarding Classified Information. All other recipients will return the report to the Commander, Chemical Systems Laboratory, ATTN: DRDAR-CLA/Clas Docu, Aberdeen Proving Ground, Maryland 21010.



SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered) page is unclassified) READ INSTRUCTIONS REPORT DOCUMENTATION PAGE BEFORE COMPLETING FORM 1. REPORT NUMBER 2. GOVT ACCESSION NO. 3. RECIPIENT'S CATALOG NUMBER D-CO3349 ARCSL-SP-83015 4. TITLE (and Subtitle) 5. TYPE OF REPORT & PERIOD COVEHED Special Publication PHYSICAL PROPERTIES OF STANDARD AGENTS, CANDIDATE AGENTS, AND RELATED COMPOUNDS August 1970-September 1982 AT SEVERAL TEMPERATURES (U) 6. PERFORMING ORG. REPORT NUMBER 7. AUTHOR(4) 8. CONTRACT OR GRANT NUMBER(#) John B. Samuel Elwin C. Penski John J. Callahan 9. PERFORMING ORGANIZATION NAME AND ADDRESS 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Commander, Chemical Systems Laboratory 1L161102A71A ATTN: DRDAR-CLB-CP 1L162706A553 Aberdeen Proving Ground, Maryland 21010 1L762710AD61 11. CONTROLLING OFFICE NAME AND ADDRESS
Commander, Chemical Systems Laboratory 12. REPORT DATE June 1983 ATTN: DRDAR-CLJ-IR 13. NUMBER OF PAGES Aberdeen Proving Ground, Maryland 21010 14. MONITORING AGENCY NAME & ADDRESS(II different from Controlling Office) 15. SECURITY CLASS. (of this report) CONFIDENTIAL 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE Declassify On: OADR. 16. DISTRIBUTION STATEMENT (of this Report) 17. DISTRIBUTION STATEMENT (of the ebetrect entered in Block 20, if different from Report) 18. SUPPLEMENTARY NOTES 19. KEY WORDS (Continue on reverse side if necessary and identity by block number) Freezing Point Diffusion Coefficient Refractive Index Density (Bulk, Liquid, Crystal) Flach Point Boiling Point Coefficient of Expansion Dipole Moment Heat of Fusion Heat of Sublimation Viscosity Melting Point Heat of Vaporization Heat of Combustion Surface Tension ABSTRACT (Continue on reverse side if necessary and identify by block number) (U) The physical properties, extrapolated properties, calculated properties, equation parameters, and references are listed for 55 agents, candidate agents, and related compounds. The physical property data system is described in general terms. Also, methods for the prediction of critical properties, diffusion coefficients of vapors in air and viscosities of vapors are described. The use, strengths, and weaknesses of the Antoine equation are discussed

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Date Entered)

THE STATE OF THE PROPERTY STATES STATES OF THE STATES OF T

SECURITY CLASSIFICATION OF THIS PAGE(N	Then Date Entered)	
19. Key Words		
Autoignition Temperature	EA 1728	
Heat Capacity	EA 1763	
Thermal Conductivity	EA 2261	
Formula Weight	EA 2337	
Vapor Pressure	EA 2361	
Volatility	EA 3307	
Solubility	EA 3430	·
Storage Stability	EA 4349	
Antoine Equation	EA 4923	
Oxygen Index	EA 5265	
Critical Properties	EA 5365	
Diffusion Coefficient	EA 5389 EA 5403	
Viscosity of Vapor	EA 5414	
EA 1033 HD	EA 5488	
EA 1034 L EA 1036 T	ER 5400	
EA 1050 1 EA 1053 HN3		
EA 1205 GA		
EA 1207		
EA 1208 GB		
EA 1209 GE		
EA 1210 GD		
EA 1211 GH		
EA 1212 GF		
EA 1213		
EA 1214		
EA 1230		
EA 1232 EA 1244		
EA 1244 EA 1245		
EA 1246		
EA 1249		•
EA 1251 DF		
EA 1253 DICL		
EA 1255		
EA 1258		
EA 1261		
EA 1262		
EA 1263		
EA 1264 EA 1274		
EA 1356		
EA 1508 VG		
EA 1511 VP		
EA 1517 VE		
EA 1576		
EA 1622		
EA 1664 VM		
EA 1677 VS		
EA 1694		
EA 1699		
EA 1701 VX EA 1724 QL		
EA 1/24 QL		



CONFIDENTIAL (This page is unclassified)

and the second seconds, seconds, seconds, present consecut accorded

The State of the S

UNCLASSIFIED

PREFACE

The work described in this report was authorized under Projects 1L161102A71A, Research in Defensive System for CW/BW; 1L762710AD61, Technical Evaluation of Foreign Chemical Warfare Potential; and 1L162706A553, Chemistry of Threat Agents and Chemical Technology. This work was started in August 1970 and completed in September 1982.

The use of trade names in this report does not constitute an official endorsement or approval of the use of such commercial hardware or software. This report may not be cited for purposes of advertisement.

Reproduction of this document in whole or in part is prohibited except with permisssion of the Commander, Chemical Systems Laboratory, ATTN: DRDAR-CLJ-IR, Aberdeen Proving Ground, Maryland 21010. However, the Defense Technical Information Center is authorized to reproduce this document for United States Government purposes.

Any suggestions or corrections for future editions should be directed to John B. Samuel, (301) 671-2366 or Elwin C. Penski, (301) 671-3953.

Acknowledgments

The authors would like to thank the many individuals (too numerous to acknowledge here) who worked on the measurement and documentation of the physical properties. However, the significant contributions of the following individuals are recognized: Fredric Belkin, Harry A. Brown, Jr., Ann Brozena, Philip B. Coulter, Donald Fielder, Robert J. Grula, Sarah San Agustin, James J. Savage, Helen Walker, David Schneck, and Bernard M. Zeffert.

In addition, the authors would also like to acknowledge the friendly cooperation extended by the Sperry Univac 1100/60 operators and the many other Management Information Systems Support Division (MISSD) personnel.

Access	ion For]
DTIC 1	DTIC TAB Unannounced Justification	
By		
	lability Codes	
Dist	Avail and/or Special	
17		

UNCLASSIFIED

CONFIDENTIAL page is unclassified)

Blank

UNCLASSIFIED

CONTENTS (U)

		Page
۱.	INTRODUCTION	7
2.	PHYSICAL CHEMICAL DATA SYSTEM	8
3.1 3.2 3.3	PREDICTIONS OF PHYSICAL PROPERTIES	10 10 13 14
	LITERATURE CITED	15
	APPENDIX A. LIST OF COMPOUNDS	17
	APPENDIX B. PHYSICAL PROPERTY DATA	27
	APPENDIX C. USE OF THE ANTOINE EQUATION TO FIT VAPOR PRESSURE DATA	359
	DISTRIBUTION LIST	367

Blank

CONFIDENTIAL

PHYSICAL PROPERTIES OF STANDARD AGENTS, CANDIDATE AGENTS, AND RELATED COMPOUNDS AT SEVERAL TEMPERATURES (U)

1. (U) INTRODUCTION

- (U) A problem facing users of physical chemical properties of chemical agents and related compounds has been the lack of a central source of reliable data. Data are often scattered in various technical reports, journals and laboratory notebooks. Many compilations of data fail to note original sources or important experimental details. As a result, the physical properties used in calculations in various technical reports are inconsistent and often not the best data available.
- (U) For over a decade, efforts of chemists in the Physical Organic Section have been directed toward providing an automated physical property data system for chemical agents and related compounds. The characteristics of the desired system are listed in table 1. To provide the maximum assistance to the user of physical chemical properties of chemical agents, every effort was made to obtain these characteristics.
- (U) This report briefly describes the physical property data system along with methods used to predict additional properties. A compilation of physical, chemical and thermodynamic data and correlations is provided for 55 chemical agents and related compounds. A list of these compounds with their chemical structures is given in Appendix A. In Appendix B, the properties along with predicted properties are provided at temperatures of -40°, -20°, 0°, 20°, 25° and 40°C.

Table 1. (U) Characteristics of the Desired Data System

- 1. Use automation to ease access and to allow for upgrading of input.
- 2. Enter properties in formatted form so that each value is machine readable.
- 3. Evaluate all available data and use best data.
- 4. Combine data to extend the experimental data range where appropriate.
- 5. Calculate properties at any specified temperature.
- 6. Provide easy to read printout with readily apparent units.
- 7. Take all data from original sources with provided references.
- 8. Provide data ranges and warnings where extrapolations are performed.

UNCLASSIFIED

المعاملات وياري والمنافي ووالمنافعة والمنافعة والمنافعة والمنافعة والمنافعة والمنافعة والمنافعة والمنافعة

(This page is UNCLASSIFIED)

2. (U) PHYSICAL CHEMICAL DATA SYSTEM

MARKET HARES SEEMEN PERSON CONTOL

many the same

(U) All values for properties and equation parameters entered into the data system are formatted and identified by property code and compound number. Thus, all properties are machine readable except solubility which lists the solvent in the reference field. Table 2 lists the major components of an 80 character input line.

Table 2. (U) Components of a Data Input Line

- 1. Compound code number
- 2. Compound letter code
- 3. Property or parameter code number
- 4. Property or parameter value
- Temperature and/or upper or lower values of temperature range
- 6. Reference field of up to 36 characters

UNCLASSIFIED

- (U) Compounds are listed in order of their EA number. A system of numbered codes was established to identify individual properties and parameters. The compound numbers, names, and structures for compounds contained in this report are tabulated in Appendix A.
- (U) Considerable time and effort were spent locating, evaluating and selecting physical chemical properties to be included in this system. The data selected are considered the best available. When conflicting data were found, selection was made primarily on the basis of experimental procedure and reported sample purity. Therefore, the values in this system tend to be for purified rather than technical grade material. When properties had been extensively evaluated and documented in reviews, these values were used unless better data had become available.
- (U) Two types of equations are used in this system to describe physical properties versus temperature. Where possible, data sets covering different temperature ranges were combined to generate property parameters based on extended temperature ranges.
- (U) Antoine equations are used to describe both vapor pressure and viscosity. The merits of the Antoine equation for fitting and extrapolating vapor pressure data are covered extensively in Appendix C. The Antoine equation has been found also to work well for fitting and interpolating viscosity data. However, for many of the compounds, the Antoine constants for viscosity were generated from three points which covered a data range of only 25°C. Extensive extrapolation of viscosity for these compounds may result in a significant error.

- (U) Density, refractive index, and surface tension are each expressed as a linear function of temperature. The method of least squares was used to generate equation parameters from the experimental data.
- (U) The reference field allows up to 36 characters per property or set of parameters. Due to this space limitation, it was necessary to abbreviate references. These references should be available in the Chemical Systems Laboratory (CSL) Technical Library. Since some data are unpublished, it was necessary to list CSL notebook (NB) numbers. Several unreferenced data points are included in the system despite substantial efforts to reference all information. Additional information is sometimes provided in the reference field, e.g., sample purity and other characteristics. In cases where the property value was reported in the literature as a range, an average value was used and the range was reported in the reference field.
- (U) Numerous tests and warnings have been incorporated into this system for the following reasons: (1) to prevent the calculation of meaningless data, and (2) to warn the user when the calculated values fall outside the range of the experimental data used in generating the input parameters. The most common warning is "THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE." Due to the small temperature coefficients, extrapolations of the linear functions such as density and surface tension over broad temperature ranges are relatively reliable. The viscosity, and vapor pressure, along with properties derived from vapor pressure, undergo significant changes with temperature. Relatively poor values for these properties could result from large extrapolations, particularly when equations are derived from data collected over a narrow temperature range. An extrapolation of vapor pressure over a 2000 temperature range could result in errors of one magnitude or more in value. Tests and warnings also have been incorporated into the data system to prevent extrapolation of data from one physical state to another. Table 3 demonstrates how the system uses freezing points (fp) (or melting points) and boiling points (bp) to classify a specified temperature prior to calculating liquid properties. Appropriate statements and warnings are printed along with the calculated values.

Table 3. (U) Test and Warnings

	Classification	Directed Action
1,	bp < T	Liquid properties are calculated at bp
2.	$f_{p} < T < b_{p}$	Liquid properties are calculated at T
3.	(fp-25°C) < T < fp	Liquid properties are calculated at T and it is noted that these values are calculated for a supercooled liquid
4.	T < (fp-25°C)	Liquid properties are calculated at the fp
5.	No fp	Liquid properties calculated at T with warning that there is no fp available
6.	No bp	Liquid properties calculated at T with warning that there is no bp available

UNCLASSIFIED

3. (U) PREDICTIONS OF PHYSICAL PROPERTIES

(U) Early in the development of the physical chemical property data system, it was realized that a great potential existed with this system for predicting additional properties. Bretsznajader's book, Prediction of Transport and Other Physical Properties of Fluids, provided much help in selecting procedures which required properties consistent with those contained within this data system. Various empirical relationships were added to the data system to allow the prediction of critical properties, the viscosity of vapor, and the diffusion coefficient of vapor into air.

3.1 (U) Critical Properties.

(U) The critical density, critical temperature, critical volume, and critical pressure are calculated using the method of Filippov. The property parameters used to calculate critical properties are the density equation constants A and B, and the molecular weight. The following equation allows the critical density (ρ_c) in gm/ml to be calculated at T degrees Kelvin (°K).

$$\rho_{\rm c} = 0.253 \left(\rho - T \frac{d\rho}{dT} \right) \tag{1}$$

where ρ is the density of compound at temperature T, and $d\rho/dT$ is the derivative of density with respect to T.

Critical temperature (T_c) in ${}^{C}K$ is calculated using the following relationship:

$$T_{c} = \frac{-1.95 \, \rho_{c}}{d\rho/dT} \tag{2}$$

Critical pressure (Pc) in atmospheres (atm) is calculated as follows:

$$P_{c} = \frac{RT_{c}\rho_{c}}{3.83 \text{ M}} \tag{3}$$

where R is 82.06 (ml atm/deg-mole), and M is the molecular weight.

The critical volume (V_c) is simply the gram molecular weight divided by the critical density.

(U) Using Filippov's method, good estimates of critical properties should be obtained when the following criteria are met for the density equation parameters:

- a. Accurate measurements were made with pure material.
- b. Experimental range is in an area where the vapor density is small compared to liquid density.
 - c. dp/dT is constant over a broad temperature range.
- (U) For most liquids, $d\rho/dT$ is relatively constant. Highly associated liquids are an exception. Water exhibits an abnormality at $4^{o}C$ where $d\rho/dT$ changes signs. Above $4^{o}C$, the magnitude of $d\rho/dT$ increases significantly with increased temperature.
- (U) Filippov³ found that errors in calculating critical properties usually did not exceed 2 percent for ρ_C and 3 percent for T_C . Literature values for critical properties of chemical agents contained in this report were not available; therefore, four test compounds were added to the system. Table 4 contains a listing of the calculated critical properties and literature values for these compounds. Input for the test compounds consisted of molecular weights and density equation parameters. Density parameters were derived from literature values of density at various temperatures over a range of 25 to 35°C. The 2-propanol was selected as a nonideal case. Due to hydrogen bonding, its density is a nonlinear function of temperature.
- (U) The estimated critical properties are in relatively good agreement with the literature values for the first three compounds. The estimated critical temperature for diethylamine is 22.5°C lower than the reported value; however, the difference in absolute temperature is only 5 percent. The estimated critical temperature for 2-propanol which is about 15 percent lower than the experimental value can be attributed primarily to the nonlinearity of its density versus temperature relationship.

Table 4. (U) Comparison of Estimated Properties with Experiment Values for Four Test Compounds

	Cri		tical Properties	9	Dirrusion of the Vap	Diffusion Coefficient of the Vapor into Air	Viscosity of the Vapor	ty or
	Density g/ml	100 000 000	Vol cc/mole	Pressure Atm	cm ² /sec	Temp (°C)	GP	Temp (°C)
				BEN	BENZENE			
Estimated	0.303	27.1	258	45.2	0.082	0	0.0072	14.2
Experimental	0.304	288.5	257	L-74	0.077	o	0.00738	14.2
				CHLO	CHLOROFORM			
Estimated	0.515	266	232	8.64	0.085	25	0.0090	212.5
Experimental	0.516	263	228	!	0.091	25	0.00936 0.0164	0 212.5
				DIETH	DIETHYLAMINE			
Estimated	0.256	201	285	35.6	190.0	0	0.0092	6*66
Experimental	0.246	223.5	297	36.2	0.0884	0	0.0092	6*66
				2-PR	2-PROPANOL			
Estimated	0.264	313	. 228	55.2	0.079	0	0.0087	8.66
Experimental	0.273	235.16	520	47.02	0.0818	0	0.0109	8*66

UNCLASSIFIED st All experimental values were taken from the International Critical Tables 4 except for the diffusion coefficient of chloroform⁵ and the critical properties of 2-propanol. 6

3.2 (U) Diffusion Coefficients.

The method of Othmer and ${\sf Chen}^7$ is used to calculate the diffusion coefficient of a vapor into air.

$$D_{12}P = (2.52 \times 10^7) \mu^{2.74} \left[\frac{\left(\frac{1}{M_1} + \frac{1}{M_2}\right)^{0.5}}{\left(v_{c_1}^{0.4} + v_{c_2}^{0.4}\right)^2} \right]^{1.23}$$
(4)

where D₁₂ = the diffusion coefficient of component one into component two in cm²/sec

 M_1 = molecular weight of component one (vapor)

M₂ = molecular weight of component two (air)

P = pressure in atm

 V_{c1} = critical volume in ml of component one (vapor)

 v_{c_2} = critical volume in ml of component two (air)

 μ = viscosity of air in centipoise (cP) at the desired temperature.

- (U) The $V_{\rm C}$ of component one is calculated as described in the preceding section on critical properties. The value used for the molecular weight of air is 28.958 while the $\rho_{\rm C}$ of air is reported to be 0.35 g/ml. Thus, the $V_{\rm C}$ of air is calculated to be 82.71 ml. In this report, all calculations of diffusion coefficients are made at one atm.
- (U) The viscosity of air is calculated at the required temperatures using the Sutherland 10 equation for the influence of temperature on the viscosity of gases. When the constants for air 4 are substituted into the equation, the following relationship is obtained:

$$\mu_{air} = \frac{0.001488 \text{ T}^{3/2}}{\text{T} + 120} \tag{5}$$

where μ_{air} is the viscosity of air at T in cP.

(U) Using diffusion coefficient literature values for 50 systems at 25°C, Othmer and Chen⁷ found an average absolute deviation of 5.75 percent. In addition, they compared their calculated values for an air-water system between 25 and 1220°C to observed values and found an average error of 7.61 percent. Citing experimental difficulties, they concluded that their method, as well as several more complex methods, should give values within experimental error.

UNCLASSIFIED

(U) Diffusion coefficients for the vapor into air for the four test compounds were estimated in the physical property data system and included in table 4. Estimated values agree within 7 percent for three of the compounds while the fourth, diethylamine, agrees within 24 percent. The literature value for the critical volume of diethylamine was then used to recalculate the diffusion coefficient yielding a value of 0.069 cm²/sec.

3.3 (U) Viscosity of Vapor.

(U) The modified Sutherland's equation shown below was developed by Licht and Stechert¹⁰ and is used to calculate the viscosity of gases. Within the pressure range where viscosity is not dependent on pressure, the equation allows the viscosity of a gas to be calculated from its critical temperature, its critical pressure, and its molecular weight.

$$\mu = 6.30 \times 10^{-4} \quad \left(\frac{\text{M}^3 \text{P}_c^4}{\text{T}_c}\right)^{1/6} \frac{\text{T}_r^{3/2}}{\text{T}_r + 0.8} \tag{6}$$

where μ = viscosity of vapor in cP at T°K

M = molecular weight

P = critical pressure in atm

T = critical temperature in °K

 $T_r = reduced temperature = T/T_c$

- (U) Licht and Stechert calculated the viscosity of gases for 23 compounds and found that for 19 of the compounds, estimated values fell within 10 percent of the literature values. The remaining compounds were water, helium, ammonia and ethanol. Estimated values for these compounds were within 21 percent of the literature values. 10
- (U) Table 4 lists the estimated and literature vapor viscosity values for the four test compounds. Using the previously estimated critical pressures and temperatures, the physical property data system was used to estimate the viscosity of vapor for these compounds. While agreement within 4 percent was obtained for the first three compounds, the estimated value for 2-propanol is 20 percent lower than the literature value. The deviation was reduced to 16 percent when the calculation was repeated using literature values for critical properties. These results for 2-propanol are consistent with Licht and Stechert's results for ethanol.
- (U) It should be noted that highly associated compounds may not give estimates as accurate as those given by the compounds found in table 4; the data and compounds shown in table 4 were probably used to develop the estimation techniques.

LITERATURE CITED (U)

- l. Penski, E. C., and Latour, L. J. Edgewood Arsenal Technical Report EATR 4491. Conversational Computation Method for Fitting the Antione Equation to Vapor Pressure-Temperature Data. February 1971. UNCLASSIFIED Report.
- 2. Bretsznajder, S. Prediction of Transport and Other Physical Properties of Fluids. Pergamon Press, Oxford. 1st Eng Ed. 1971.
- 3. Filippov, L. P. Description of the Properties of Liquids in Terms of Similarity Theory. Zhurn. Fiz. Khim. 37, 201 (1963).
- 4. Washburn, E. W. Editor. The International Critical Tables of Numerical Data, Physics, Chemistry and Technology. 1st Ed. Vols. 3 and 5. McGraw-Hill Publishing Company, New York. 1929.
- 5. Mrazek, R. V., Wicks, C. E., and Prabhu, K. N. S. Dependence of the Diffusion Coefficient on Composition in Binary Gaseous Systems. J. Chem & Eng Data. 13 (4), 509 (1968).
- 6. Wilhoit, R. C., and Zwolinski, B. J. Properties of Aliphatic Alcohols. J. Phy. Chem. Ref. Data. 2, Suppl 1, 1-78 (1973).
- 7. Othmer, D. F., and Chen, H. T. Correlating Diffusion Coefficients in Binary Gas Systems. Ind. Eng. & Chem. Proc. Des. & Dev. 1 (4), 249 (1962).
- 8. Eshbach, O. W., and Souders, M. Editors. Handbook of Engineering Fundamentals. 3rd Ed. p 1504. John Wiley and Sons, New York. 1975.
- 9. Pickering, S. F. A Review of the Critical Constants of Various Gases. J. Phy. Chem. 28, 102 (1924).
- 10. Licht, W. Jr., and Stechert, D. G. The Variation of the Viscosity of Gases and Vapors with Temperature. J. Phys. Chem. 48, 23 (1944).

UNCLASSIFIED

Blank

CONFIDENTIAL

APPENDIX A

LIST OF COMPOUNDS (U)

CLASSIFIED BY: Multiple Sources

DECLASSIFY ON: OADR

(This page is UNCLASSIFIED)

CONFIDENTIAL

Blank

APPENDIX A

LIST OF COMPOUNDS (U)

	Number Name	Name	Structure
(U)	EA 1033 (HD)	Bis(2-chloroethyl)sulfide; Distilled Mustard	C1C ₂ H ₄ SC ₂ H ₄ C1
(U)	EA 1034 (L)	2-Chlorovinyldichloroarsine	C1CH=CHAsC12
(U)	EA 1036 (T)	Bis [2-(2-chloroethylmercapto) ethyl] ether	(C1C ₂ H ₄ SC ₂ H ₄) ₂ 0
(U)	EA 1053 (NH3)	Tris(2-chloroethyl)amine; Nitrogen Mustard -3	(C1C ₂ H ₄) ₃ N
(U)	EA 1205 (GA)	Ethyl N,N-dimethylphosphoramido- cyanidate	CH ₃ N-P-O-C ₂ H ₅
(U)	EA 1207	Ethyl methylphosphonofluoridate	CH ₃ -P-OC ₂ H ₅
(U)	EA 1208 (GB)	2-Propyl methylphosphono- fluoridate	CH ₃ -P-O-CH F CH ₃
(U)	EA 1209 (GE)	2-Propyl ethylphosphono- fluoridate	C ₂ H ₅ -P-O-CH F CH ₃
(U)	EA 1210 (GD)	Pinacolyl methylphosphono- fluoridate	CH ₃

UNCLASSIFIED

0

CH_

(U)	EA 1211	2-(4-Methylpentyl)methyl-	CH ₃ -P-O-CH
	(GH)	phosphonofluoridate	F CH ₂ CH
			- 3

Appendix A

(U)	EA 1249	2 Methylpropyl methyl- phosphonofluoridate	CH ₃ -P-OCH ₂ CH
			0

CH.

Appendix A

UNCLASSIFIED

CONFIDENTIAL

(U)	EA 1274	2-Pentyl methylphos- phonofluoridate	$CH_3 - P < O - CH(CH_3) CH_2 CH_2 CH_3$
(C)	EA 1356	(Racemic) 2-methylcyclo- hexyl methylphosphono- fluoridate	CH ₃ -P
(U)	EA 1508 (VG)	0,0-Diethyl S-(2-diethyl- aminoethyl) phosphoro- thioate	C_2H_5O $P-SC_2H_4N(C_2H_5)_2$ C_2H_5O C_2H_5O C_3 C_4
(V)	EA 1511 (VP)	3-Pyridyl 3,3,5-trimethyl- cyclohexyl methylphosphonate	CH3-CH3
(U)	EA 1517 (VE)	O-Ethyl S-(2-diethylamino- ethyl) ethylphosphonothioate	C ₂ H ₅ O -SC ₂ H ₄ N(C ₂ H ₅) ₂
(U)	EA 1576	2-Ethoxycarbonyl-1-methyl- vinyl 3-methylcyclohexyl methylphosphonate	CH ₃ -P-O-C=CH-C-OC ₂ H ₅
(ປ)	EA 1622	O-Isopropyl S-(2-diethyl- aminoethyl) methylphosphono- thioate	CH ₃ P-SC ₂ H ₄ N(C ₂ H ₅) ₂ CH CH ₂

(U) EA 1664 (VM)	O-Ethyl S-(2-diethylamino- ethyl) methylphosphonothioate	CH ₃ P-SC ₂ H ₄ N(C ₂ H ₅) ₂
---------------------	-------------------------------------------------------------	-------------------------------------------------------------------------------------------------

(U) EA 1763 O-n-Propyl S-(2-diisopropyl-aminoethyl) methylphosphonothioate

$$\begin{array}{c} \text{CH}_{3} \\ \text{P-SC}_{2} \text{H}_{4} \text{N} \left[\text{CH} \left(\text{CH}_{3} \right)_{2} \right]_{2} \end{array}$$

(U) EA 2261 O-(2-Methylcyclohexyl)
methylphosphonofluoridothioate

(U) EA 2337 O-Pinacolyl methylphosphonofluoridothioate

(U) EA 2361 O-Cyclopentyl methylphosphonofluoridothioate

(U) EA 3307 2,5-Dimethylcyclohexyl methylphosphono-fluoridate

(U) EA 3430 2-Methylcyclopentyl methylphosphono-fluoridate

(U) EA 4349 Cyclooctyl methylphosphonofluoridate

Appendix A

UNCLASSIFIED

CONFIDENTIAL

(U) EA 4923 1-Methoxy cycloheptatriene

(U) EA 5265 2,4-Dimethylcyclohexyl methylphosphono-fluoridate

(C) EA 5365 2-Dimethylaminoethyl N,N-dimethylphosphoramidofluoridate

(U) EA 5389 0-2,4-Dimethylcyclohexyl methylphosphonofluoridothioate

(C) EA 5403 1-Dimethylamino-2-propyl N,N-dimethylphosphoramido-fluoridate

(C) EA 5414 1-Dimethylamino-3-propyl N,N-diemethylphosphoramido-fluoridate

(C) EA 5488 3-Quinuclidyl-N, dimethylphosphoramidofluoridate

Blank

CONFIDENTIAL

APPENDIX B

PHYSICAL PROPERTY DATA (U)

CLASSIFIED BY: Multiple Sources

DECLASSIFY ON: OADR

(This page is UNCLASSIFIED)

CONFIDENTIAL

Blank

ION: DENSITY= 1.2954 - .00107 *TEMP.(C.) DETERMINED OVER BREFERENCE: CRLR542 RANGE 20-40C LIQUID **** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES
ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. **** DETERMINED OVER THE VOLATILITY(MG/WETER CUBED) = .37+03 VOLATILITY(MILLIMOLE/ WETER CUBED) = .23+01 ++++ WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ++++ AT THE MELTING POINT IN LIKE OF 7.47009, B= 1935.47, C= 204.2 REFERENCE: EQ.CAL FROM V389 REFERENCE: CRLR542 VAPOR PRESSURE(TONR)= .11+00 AT 25.0 DEG. CENT. REFERENCE: CRLR54 DENSITY(G/ML)* 1.2799 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2954 -THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 PAN FORMULA WEIGHT: 1033 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .42-01 15.3 FULLOWING ANTOINE CONSTANTS(EATR 4491): A= SUMMARY OF PROPERTIES OF EA 14.9 TO 140.0 DEG. CENT. ESTIMATED BOILING POINT (CENT.) = 217.5 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) .. TEMPERATURE RANGE

TEMPERATURE 73.2 DETERMINED OVER THE TEMPERATU! WERE USED TO CALCULATE THE VISCOSITY 273.2 -2.59800, B= -952.50, C= E 15.0 TO 35.0 DEG. CENT. REFERENCE:CRLR542 VISCOSITY(CENTIPOISE) = 5.175 THE FOLLOWING ANTOINE CONSTANIS (EATR 4491): Am RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

**** REFERENCE: CRLR542 WERE USED TO CALCULATE THE SURFACE TENSION 43.9 DYNES/CM **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .1340*TEMP.(C.) 40.0 DEG. CENT. 45.3700 -20.0 TO • DETERMINED OVER THE TEMPERATURE RANGE 20. WERE USED TO CALCULATE THE SURFACE TENSION EGUATION: SURFACE TENSION(DYNES/CM) = TE

DETERMINED OVER THE TEMPERATURE RANGE SEC A 1975 79A(5)635 REFERENCE: J.RES NBS COMBUSTION(KCAL/MOLE) = 7.58 AT 25.0 ner centrators (C.) REFRACTIVE INDEX(ND)= 1.5305 WAS CALCULATED FROM THE EQUATION:

REFERENCE: J.RES NBS SEC A 1975 794(5)835 REFERENCE: CRLR542 11. REFERENCE: CRDL-542 25.0 DEGREE CENT. REF REFERENCE: MICRO METHOD CRLR542 REFERENCE: CRLR542 SUBLIMATION(KCAL/MOLE)= 18.60 AT 14.5 DEGREE CENT. FUSION(KCAL/MOLE)= 4.2 AT 25.0 DEGREE CENT. RE 19.0 DEGREE CENT. (KCAL/MOLE) = -47.91 AT .0569 AT .0504 AT OF FUSION(KCAL/MOLE) = OF FORMATION OF LIQUID HEAT CAPACITY (KCAL/MOLE) = HEAT CAPACITY (KCAL/MOLE) = FLASH POINT

REFERENCE: CRLN542 -30 TO 10 DEG C 20.0 DEGREE CENT. REFERENCE: CRLR542 REFERENCE: CRLR542 REFERENCE: WATER CRULS42 DEGREE CENT. SEC) = .387-03 AT 4.0 DI REFERENCE: CRLR542 22.0 DEGREE CENTIGAADE THERMAL CONDUCTIVITY(CAL/CM+*2/CM/DEG. C./SEC) = .316-03 AT THERMAL CONDUCTIVITY(CAL/CM**2/CU/DEG. C./SEC) = .387-03 AT FREEZING POINT (DEG. CEN1.)= 14.45 REFERENCE: CRLR542 .820+00 AT SULUBILITY (G/100G SOLVENT) ZHURN. FIZ KHIM, 37. 201 (1983) COLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE ATE. CC/MOLE DENSITY TEMPERATURE VOLUME GM/CC . 4020 HE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .055 DIFFUSION COEF.

456, 11

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 8.37-03 VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM, 48,23(1944) VISCOSITY OF THE MODIFIED SUTHERLANDS

6

PAGE MULBER

14.5 DEGREES

¥

1033

OF COMPOUND EA

END

NCLASSIFIED

Appendix B

.00107 +TEMP.(C.) DETERMINED DVER ***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT, THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE WELTING POINT OR FREEZING POINT. **** DETERMINED OVER THE REFERENCE: CRLR542 DENSITY(G/ML) = 1.2799 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2954 = THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. C= 204.2 7.47009, 8= 1935.47, C= 7 REFERENCE: EQ.CAL FROM V389 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 15.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. TEMPERATURE RANGE 14.9 TO 140.0 DEG. CENT. HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* ESTIMATED BOILING POINT (CENT.)= . 42-01 VOLATILITY (MG/METER CUBED) = VAPOR PRESSURE(TORRI=

CRLR542

GENERAL REFERENCE:

POLITY IN LIEU

STATE OF

At the

1033

SURFARY OF PROPERTIES OF

COMMON NAME:

:

159.1

FORMULA WEIGHT:

DETERMINED OVER THE TEMPERATURE THE VISCOSITY ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE **** -2.59800, B= -952.50, C* 273.2

REFERENCE: CRLR542 KANGE 20-40C LIQUID

WERE USED TO CALCULATE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.5

RANGE 15.0 TO 35.0 DEG. CENT. REFERENCE: CRLR542

VISCOSITY(CENTIPDISE)= 5.175

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

** * * * REFERENCE: CRLR542 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRI MERE USED TO CALCULATE THE SURFACE TENSION 43.9 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .1340+TEMP. (C.) 45.8700 -20.0 TO EDUATION: SURFACE TENSION DYNES/CM) .

REFRACTIVE INDEX (NO. =

20.0 TC 30.0 DEG. CENT. REFERENCE: CRLR542
COMBUSTION: (CENTIGRADE) = -7.56 AT 25.0 DEG. CENT. REFERENCE: U.REC NRC CENTIGRADE) = -7.56 AT 25.0 DEG. CENT. REFERENCE: U.REC NRC CENTIGRADE) = 105.0 REFERENCE: U.REC NRC REFERENCE: U.REC NRC CENTIGRADE) = 105.0 REFERENCE: U.REC NRC REFERENCE: U.REC NRC REFERENCE REF REFERENCE: J.RES NBS HEAT OF COMBUSTION(*CAL/MOLE) = -7.56 AT 25.0 DEG. CENT. REFERENCE: J.RES FLASH POINT, (CENTIGRADE) = 105.0 PEFERENCE: MICRO METHOD CRIES-22 HEAT OF SUBLIMATION**CAL/MOLE) = 18.60 AT 14.5 DEGREE CENT. REFERENCE: CRLES-42 HEAT OF FUSIO**(KCAL/MOLE) = 4.2 AT 25.0 DEGREE CENT. REFERENCE: CRL-542 HEAT OF FORMATION OF LIQUID (*KCAL/MOLE) = -47.91 AT 25.0 DEGREE CENT. REFERENCE: CRLES-42 HEAT CAPACITY (*KCAL/MOLE) = .0569 AT 19.0 DEGREE CENT. REFERENCE: CRLES-42 THERMAL CONDUCTIVITY(CAL/CN**2/CM/DEG. C./SEC) = .316-03 AT 20.0 DEGREE CENT THERMAL CONDUCTIVITY(CAL/CM**2/CM/DEG. C./SEC) = .387-03 AT 4.0 DEGREE CENT

SEC A 1975 79A(5)635

REFERENCE: CRLR542

TO 10 DEG

-30

20.0 DEGREE CENT.

CRL RS42 REFERENCE: WATER CRULS42 REFERENCE: 4.0 DEGREE CENT. DEGREE CENTIGRADE REFERENCE: CRLR542 .920+00 AT 14.45 FREEZING POINT (DEG. CENT.)= SOLUBILITY(G/100G SOLVENT)

201 (1963) ZHURN. FIZ KHIM. 37. FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. FRESSURE ATM. CC/MOLE 395.70 DENSITY TEMPERATURE VOLUME DEGC 22/¥5 311

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .055 DIFFUSION COEF. .

39.49

456.11.

. 1020

ABOVE CRITICAL FROPERTIES AND THE VISCOSITY OF VAPOR * 6.37-03 CENTIPDISE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 46,23(1944) VISCOSITY OF THE

å

PAGE NUMBER

14.5 DEGREES C.

₹

1033

END OF COMPOUND EA

出 SSIFIE

THEREFORE THE LIQUID PROPERTIES ARE REFERENCE: GENERAL .O DEGREES CENTIGRADE SUBJARY OF PROPERTIES OF EA 1033 ATT. .O DEGREE COMMON NAME: HD FORMULA WEIGHT: 159.1 REQUESTED TEMPERATURE IS BELUM THE MELTING POINT. AT SUPECOULED LIQUID AND NOT THE SOLID **** THE ***** MARNING VALID DINLY FOR

THE DETERMINED OVER 204.2 7.47009, BE 1935.47, CT 2 MERE USED TO CALCULATE THE FOILDWING FOUR PROPERTIES: CONSTANTS(EATR 4491): Am 14.9 TO THE FULLOWING ANTOINE TEMPERATURE RANGE

. 99-02 VAPOR PRESSURE(TORRIS

VOLATILITY (MILLIMOLE/ METER CUBED)= 15.8 ESTIMATED BOILING POINT (CENT.) = 217.5 HEAT OF VAPORIZATION (KILOCALGRIES/MOLE) = VOLATILITY (MG/METER CUBEO) =92+02

*TEMP. (C.) DETERMINED OVER ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** .00100 REFERENCE: CRLR542 1.2954 -VAPOF PRESSURE(TORR) = .11+00 AT 25.0 DEG. CENT. REFERENC Density(G/ML) = 1.2954 WAS CALCULATED FROM THE EQUATION: DENSITY = The temperature range 20.0 to 40.0 deg. cent. Reference: CR AT

REFERENCE: CRLR542 RANGE 20-40C LIQUID

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

WERE USED TO CALCULATE THE VISCOSITY DETERMINED OVER THE 273.2 -2.59800, B* -952.50, C* 35.0 DEG. CENT. REFERENCE:CRLR542 [1PG15E]= 7.748 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. VISCUSITY (CENTIPOISE)= 15.0 TO RANGE Z IE

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

**** REFERENCE: CRLR542 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .1340*TEMP.(C.) 40.0 DEG. CENT. R 45.9 DYNES/CM • 20.0 10 45.8700 EQUATION: SURFACE TENSION(DYNES/CM)= 45.870 Determined over the temperature range 20.0 Were used to calculate the surface tension=

DETERMINED OVER THE TEMPERATURE RANGE (ND) = 1.5377 - .00050*TEMPERATURE(C.) 30.0 DEG. CENT. REFERENCE: CRLR542 EQUATION: 1.5377 WAS CALCULATED FROM THE REFRACTIVE INDEX(ND) = 1.5377 -REFRACTIVE INDEX(ND)=

SEC A 1975 79A(5)635 REFERENCE: J.RES NBS REFERENCE: MICRO METHOD CRLR542 14.5 DEGREE CENT. REFERENCE: CRLR542 25.0 DEG. CENT. COMBUSTION(KCAL/MDLE)= -7.56 AT 2.01NT, \(\text{VENTIGRADE})= 105.0 \\ SUBLIMATION(KCAL/MOLE)= 18.60 AT \\ \text{cictonikcal/MDLE} = 4.2 AT 25.0 20.0 10 5 FLASH

REFERENCE: J.RES NBS SEC A 1975 794(5)635 -30 20.0 DEGREE CENT. REFERENCE: CRDL-542 REFERENCE: CRLR542 REFERENCE: CRLR542 25.0 DEGREE CENT. 19.0 DEGREE CENT. .0 DEGREE CENT. ./SEC) = .316-03 AT 25.0 DEGREE CENT. (KCAL/MOLE)= -47.91 AT HEAT CAPACITY (KCAL/MDLE) = .0569 AT 19.0 DEGI HEAT CAPACITY (KCAL/MDLE) = .0504 AT .0 DEGI THERMAL CONDUCTIVITY(CAL/CM++2/CM/DEG. C./SEC) = THERMAL CONDUCTIVITY(CAL/CM++2/CM/DEG. C./SEC) = OF FORMATION OF LIQUID OF FUSION (KCAL/MOLE) エピア

CRL R542

REFERENCE:

5 5

REFERENCE: CRLPS42

REFERENCE: WATER CRD1542 4.0 DEGREE CENT. 22.0 DEGREE CENTIGRADE /SEC) = .387-03 AT REFERENCE: CRLR542 ..920+03 AT 14.45 FREEZING POINT (DEG. CENT.)* SCLUBILITY (G/100G SOLVENT)

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 395.70 456.11 CM/CC

罪

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .049 COEF. DIFFUSION

39.48

VISCOSITY OF VAPOR . 6.00-03 CENTIPDISE ABOVE CRITICAL PROPERTIES AND THE USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) ESTIMATED VAPOR MAS OF THE VISCOSITY

PAGE

.O DEGREES

۲

1033

END OF COMPOUND EA

Ŧ SSIFIED

Appendix B

.00107 +TEMP.(C.) DETERBINED OVER GENERAL REFERENCE: CRLR542 DETERMINED OVER THE REFERENCE: CRLR542 RANGE 20-40C LIQUID 20.0 DEGREES CENTIGRADE REFERENCE: CRLR542 204.2 DENSITY(G/ML) = 1.2739 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2954 --THE TEMPERATURE RANGE 20.0 fg 40.0 DEG. CENT. REFERENCE: CRIRS42 RANG VOLATILITY(MILLIMOLE/ METER CUBED) = 25.0 DEG. CENT. REFERENCE: CRLR54 MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORN)= RG-A' FORMULA WEIGHT: 15.1 OF PRGPERTAGE OF EACOMMON NAME: HO HEAT OF VAPORIZATIOH(KILOCALORIES/MOLE)* . 11+00 ESTIMATED BOILING POINT (CENT.) = 217.5 VOLAFILITY(MG/METER CUBED)= SUMMARY VAPOR PRESSURE(TORR)=

13.2 DETERMINED OVER THE TEMPERATU! WERE USED TO CALCULATE THE VISCOSITY REFERENCE: CRLR542 273.2 .1340*TEMP.(C.) 40.0 DEG. CENT. R -2.59800, B= -952.50, C= ħ 35.0 DEG. CENT. REFERENCE: CRLR542 45.8700 FOLLOWING ANTOINE CONSTANTS(EATR 4491): As EQUATION: SURFACE TENSION(DYNES/CM)= VISCOST TY (CENTIPOTSE)= 15.0 10 RAMGE

DETERMINED OVER THE TEMPERATURE RANGE DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CE WERE USED TO CALCULATE THE SURFACE TENSION 43.2 DYNES/CM REFRACTIVE INDEX(ND)= 1.5277 WAS CALCULATED FROM THE EQUATION:

REFERENCE: J. RES NBS SEC A 1975 79A (5) 635 REFERENCE: CRLR542 REFERENCE: MICRO METHOD CRLR542 30.0 DEG. CENT. REFERENCE: CRLR542 LE) = -7.56 AT 25.0 DEG. CENT. REFER ITIGRADE) = 105.0 REFERENCE: CRLR542 ·(CENTIGRADE) = REFRACTIVE INDEX(ND)= HEAT OF COMBUSTION (KCAL/MOLE) = 20.0 10

REFERENCE: J.RES NBS SEC A 1975 79A(5)635 REFERENCE: CRLR542 REFERENCE: CRLR542 TO 10 DEG C REFERENCE: CRLR542 -30 20.0 DEGREE CENT. OF SUBLIMATION(KCAL/MOLE)= 19.60 AT 14.5 DEGREE CENT. REFERENCE: CRL-542 OF FUSION(KCAL/MOLE)= 4.2 AT 25.0 DEGREE CENT. REFERENCE: CRDL-542 OF FURMATION OF LIQUID (KCAL/MOLE)= -47.91 AT 25.0 DEGREE CENT. REI .316-03 AT 19.0 DEGREE CENT. HEAT OF SUBLIMATION (KCAL/MOLE) = 18.60 AT .0569 AT HEAT CAPACITY (KCAL/MOLE)= CAPACITY (KCAL/MOLE)= FLASH POINT. HEAT HEAT HEAT

4.0 DEGREE CENT. 22.0 DEGREE CENTIGRADE /SEC) = .387-03 AT REFERENCE: CRLR542 THERMAL CONDUCTIVITY(CAL/CM+2/CM/DEG. C./SEC) = CONDUCTIVITY(CAL/CM++2/CM/DEG. C./SEC) = .920+00 AT 14.45 FREEZING POINT (DEG. CENT.)= SOLUBILITY(G/100G SOLVENT) THERMAL

ZHURN. FIZ KHIM. 37. 201(1963)

REFERENCE: WATER CRDLS42

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE **JHE**

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .057 DIFFUSION COEF. .

VISCOSITY OF VAPOR = 6.52-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

ပ 20.0 DEGREES ¥ 1033 END OF COMPOUND EA

PAGE NUMBER

25.0 DEGREES CENTIGRADE 1 1633 AT 25.0 DEGRI FORMULA WEIGHT: 159.1 SURMARY OF PROPERTIES OF EA COMMON NAME: HO

DETERMINED OVER THE 7.47009, B= 1935.47, C= 204.2 REFERENCE: EQ.CAL FROM V389 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 14.9 TO 140.0 DEG. CENT. FULLOWING ANTOINE TEMPERATURE RANGE

Appendix B

ESTERATED BOILING POINT (CENT.) = 217.5 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = . 11+00 VAPOR PRESSURE(TORRIE

M: DENSITY= 1.2954 - .00107 +TEMP.(C.) DETERMINED OVER REFERENCE: CRLR542 RANGE 20-40C LIQUID .57+01 REFERENCE: CRLR542 VOLATILITY(MILLIMOLE/ METER CUBED)= 10MM) - .11+00 AT 25.0 DEG. CENT. REFERENCE: CRLR54 1.2685 WAS CALCULATED FROM THE EQUATION: DENSITY - 1.2954 - RANGE 20.0 IQ 40.0 DEG. CENT. REFERENCE: 11+00 . 91+03 VOLATILITY (MG/METER CUBED)* VAPOR PRESSURE(TORR)-DENSITY (G/ML) =

FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.59800, B= -952.50, C= 273.2 DETERMINED OVER THE TEMPERATURE JE 15.0 TO 35.0 DEG. CENT. REFERENCE:CRLR542 THE TEKPERATURE RANGE 116

. 1340+TEMP.(C.) 40.0 DEG. CENT. R ı 45.8700 VISCOSITY (CENTIPOLSE)= PANCE JH.

REFERENCE: CRLR542 THE SURFACE TENSION 42.5 DYNES/CM 1.5252 WAS CALCULATED FROM THE EQUATION: 20.0 10 EQUATION: SURFACE TENSION(DYNES/CM)= 45.
DETERMINED OVER THE TEMPERATURE HANGE 20
WERE USED TO CALCULATE THE SURFACE TENSION REFRACTIVE INDEX (ND)=

DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: J.RES NBS SEC A 1975 79A(5)635 REFERENCE: MICRO METHOD CRLR542 REFRACTIVE INDEX(ND) = 1.5377 - .00050+TEMPERATURE(C.) 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542 25.0 DEG. CENT. (CENTIGRADE) = 105.0 COMBUSTION(KCAL/MOLE) = -7.56 AT

REFERENCE: J. RES NBS SEC A 1975 794(5)635 SUBLIMATION(KCAL/MOLE) = 18.60 AT 14.5 DEGREE CENT. REFERENCE: CRLR542 FUSION(KCAL/MOLE) = 4.2 AT 25.0 DEGREE CENT. WEFERENCE: CRDL-542 FORMATION OF LIQUID (KCAL/MOLE) = -47.91 AT 25.0 DEGREE CENT. REFERI OF FORMATION OF LIQUID FLASH POINT. Ö HEAT HEAT

REFERENCE: CRLR542 REFERENCE: CRLR542 -30 20.0 DEGREE CENT. 4.0 DEGREE CENT. 19.0 DEGREE CENT. .0569 AT HEAT CAPACITY (KCAL/MOLE) = HEAT CAPACITY (KCAL/MOLE) =

REFERENCE! WATER CRDLS42

ZHURN. FIZ KHIM. 37. 201 (1963)

REFERENCE: CRLR542 RÉFERENCE: CRLR542

TO 10 DEG C

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE A TEK CC/MOLE SW/CC Ŧ

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 090: DIFFUSION COEF. *

CENT 1 POI SE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.65-03 MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

25.0 DEGREES C. AT 1033 END OF COMPOUND EA

PAGE NUMBER 8-

33

HEAT OF

.00107 +TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: CRLR542 204.2 DETERMINED OVER THE REFERENCE: CRLR542 RANGE 20-40C LIQUID 40.0 DEGREES CENTICRADE VAPOR PRESSURE(TORR)= .29+04 VOLATILITY(MILLIMOLE/ METER CUBED)"
VAPOR PRESSURE(TORR)= .11+00 AT 25.0 DEG. CENT, REFERENCE: CRLR542
DINSITY(G/ML)= 1.2524 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2954 -- .
THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT WERE USED TO CALCULATE THE FOLLOWING FOUN PROPERTIES:

VAPOR PRESSURE (TORR). 1935.47, 159.1 FORMULA WEIGHT: 7.47009. 1033 SUMMARY OF PRUPERTIES OF EA ESTIMATED BOILING POINT(CENT.) - 217.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) =
VOLATILITY(MG/METER CUBED) = .29+04
VAPOR PRESSURE(TORR) = .11+00 AT 25 COMMON NAME:

WERE USED TO CALCULATE THE VISCOSITY DETERMINED OVER THE IE 15.0 TO 35.0 DEG. CENT. REFERENCE: CRLR542 VISCOSITY (CENTIPOISE) = 2.778 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 273.2 -2.59800, B= -952.50, C= THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= RANGE UNCL

45.8700 EQUATION: SURFACE FENSION(DYNES/CM)= THE

DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: CRLR542 .1340*TEMP.(C.) 40.0 DEG. CENT. R .00050 *TEMPERATURE (C.) DETERMINED OVER THE TEMPENATURE RANGE 20.0 TO 40.0 DEG. CE WERE USED TO CALCULATE THE SURFACE TENSION 40.5 DYNES/CM REFRACTIVE INDEX(ND)* 1.5177 MAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)= 1.5377 -

SEC A 1975 79A(5)635 REFERENCE: J. RES NBS REFERENCE: CRLR542 SUBLIMATION(KCAL/MOLE)* 105.0 REFERENCE: MICRO METHOD CRLR542 FUSION(KCAL/WOLE)* 18.60 AT × 14.5 DEGREE CENT. REFERENCE: CRLRF COMBUSTION(KCAL/MOLE)= -7.58 AT 25.0 DEG. CENT.
DINT, '(CENTIGRADE)= 105.0 REFERENCE: MIC HEAT

REFERENCE: J. RES NBS SEC A 1975 79A(5)635 REFERENCE: CRLR542 REFERENCE: CRLR542 TO 10 DEG C REFERENCE: (-30 20.0 DEGREE CENT. 4.0 DEGREE CENT. 25.0 DEGREE CENT. REFERENCE: CRD:-542 REFERENCE: CRLR542 REFERENCE: CRLR542 /SEC) = .316-03 AT /SEC) = .387-03 AT REFERENCE: CRLR542 19.0 DEGREE CENT. THERMAL CONDUCTIVITY(CAL/CM++2/CM/DEG. C./SEC) =
IHERMAL CONDUCTIVITY(CAL/CM++2/CM/DEG. C./SEC) =
FREEZING POINT (DEG. CENT.)= 14.45 REFERENC (KCAL/MOLE)= . 0569 AT OF FUSICN(KCAL/MOLE) = OF FORMATION OF LIQUID CAPACITY (KCAL/MOLE) = CAPACITY (KCAL/MOLE) =

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME DENSITY TEMPERATURE

REFERENCE: WATER CRDL542

22.0 DEGREE CENTIGRADE

.920+00 AT

SOLUBILITY (G/100G SOLVENT)

39.49 SCK/SS 395.70 456.11 CM/CC 포

CH.SQ./SEC CALCULATED FOR VAPOR IN AIR 990. DIFFUSION COEF.

VISCOSITY OF VAPOR = 7.04-03 CENTIPOISE PROPERTIES AND THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL THE VISCOSITY OF THE VAPOR MAS LOTTEM, 48,23(1944)

40.0 DEGREES C. ¥ END OF COMPOUND EA 1033

PAGE NUMBER

SUMMARY OF PROPERTIES OF EA 1034 AT THE NEIZING FOINT IN LIEU OF -40 MEG C COMMON NAME: L FORMULA WEIGHT: 207.3 GENERAL REFERENCE: S.O./R/667 PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES MELETING POINT IN LIEU OF -40 DEG C ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. ****

DETERMINED OVER THE 6.40361, B= 1237.03, C= 155.2 REFERENCE: S.O./R/561 HIGH PURITY THE FULLOWING ANTOINE CONSTANTS (EATR 4491): As

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .24-01

50.0 TO 150.0 DEG. CENT.

TEMPERATURE RANGE

Appendix B

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** VOLATILITY(MILLIMOLE/ METER CUBED)= HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= ESTIMATED BOILING POINT (CENT.) = 195.9 . 29+03 VOLATILITY(MG/METER CUBED)=

.00167 *TEMP.(C.) DETERMINED OVER 1.9210 -REFERENCE: S.O./R/667 1.9230 MAS CALCULATED FROM THE EQUATION: DENSITY* RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: 5 THE TEMPERATURE RANGE DENSI TY (G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 142.4 -1.02201, B= -223.38, C= 40.0 DEG. CENT. REFERENCE:SO/R/667 FULLOWING ANTOINE CONSTANTS (EATR 4491): A= 3.631 VISCOSITY (CENTIPOISE)= 20.0 10 F RANGE THE

.1218*TEMP.(C.) 44.1900 -SURFACE TENSION DYNES/CM)= EQUATION: Ŧ

REFERENCE: 5.0./R/544 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/55 WERE USED TO CALCULATE THE SURFACE TENSION 44.3 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: -18 TO .1 DEG C ETF100-41V4 ND: 1.6201 - .00050*TEMPERATURE(C.) 40.0 DEG. CENT. REFERENCE: S.O./R/667 MELTING POINT (DEG. CENT.) = -1.2 REFERENCE: "18 TO .1 DEC REFRACTIVE INDEX(ND) = 1.6207 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND) = 1.6201 - 00050+TEMPERATURE(C 20.0 TO

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/MOLE 344.72 DENSITY TEMPERATURE VOLUME SM/CC 뿔

429.11 6014

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .052 DIFFUSION COEF.

CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR . 7.86-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING (1 MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

-1.2 DEGREES C. ۲ 1034 END OF CORPOUND EA

PAGE NUMBER B-

SSIFIED

GENERAL REFERENCE: S.O./R/667 THEREFORE THE LIQUID PROPERTIES ARE DETERMINED OVER THE RANGE DEGREES CENTIGRADE 6.40361, B= 1237.03, C= 155.2 REFERENCE: S.O./R/561 HIGH PURITY VOLATILITY(MG/METER CUBED)= .24+02 VOLATILITY(MILLIMOLE/ METER CUBED)= +++++ WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE FORMULA WEIGHT: 207.3 -20.0 THE REQUESTED TEMPERATURE IS BELOW THE M SUPECDOLED LIQUID AND NOT THE SOLID ++++ 1034 TERPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFER Were used to calculate the following four properties: 19.8 THE FILLDWING ANTOINE CONSTANTS (EATR 4491): A. VAPOR PRESSURE(TORR) = .18-02 ESTIMATED BOILING POINT(CENT.) = 195.9 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .24+02 SUMMARY OF PROPERTIES OF COMMON NAME: VALID ONLY FOR THE RANGE

.00167 *TEMP.(C.) DETERMINED OVER TEMPERATURE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE DENSITY (G/ML) * 1.9544 WAS CALCULATED FROM THE EQUATION: DENSITY * 1.9210 - THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.D./R/667 142.4 ů -223, 38, -1.02201, B=

DETERMINED OVER THE TEMPERATUR OF THE DATA TEMPERATURE RANGE WERE *+*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.02 ie 20.0 to 40.0 deg. Cent. Reference:SD/R/667 viscosity(centipoise) = 6.353 RANGE

REFERENCE: 5.0./R/544 **** WERE USED TO CALCULATE THE SURFACE TENSION 46.6 DYNES/CM **** WARNING: THE ABGVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE HANGE .1218*TEMP.(C. 44.1900 -20.0 TG DETERMINED OVER THE TEMPERATURE RANGE 20 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM)-품

DETERMINED OVER THE TEMPERATURE RANGE MELTING POINT (DEG. CENT.) = -1.2 REFERENCE: -18 TO .1 DEG C ETF100-41V4
REFRACTIVE INDEX(ND)= 1.6301 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.6201 - .00050+TEMPERATURE(C.) DETERMINED
20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. CC/MOLE 뿔

VISCOSITY OF VAPOR # 7.04-03 CENTIPOISE CRITICAL PROPERTIES AND THE ABOVE VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM, 48, 23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

END OF COMPOUND EA 1034 AT -20.0 DEGREES C.

PAGE NUMBER B.

Appendix B

UNCLASSIFIED

GENERAL REFERENCE: S.O./8/667 DEGREES CENTIGRADE 207.3 ó FORMULA WEIGHT: 1034 **₹** 9 SUMMARY OF PROPERTIES COMMON NAME:

DETERMINED OVER THE 155.2 PURITY 8.40361, B= 1237.03, C= REFERENCE: S.O./R/561 HIGH TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: CONSTANTS(EATR 4491): A-FULLOWING ANTOINE

VAPOR PRESSURE (TORR) =

VOLATILITY(MG/METER CUBED)= .33+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .16+01 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 17.5 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 195.9 ESTIMATED BOILING POINT (CENT.)=

.00167 *TEMP.(C.) DETERMINED OVER REFERENCE: 5.0./R/667 1.9210 **DENSITY** FROM THE EQUATION: 40.0 DEG. CENT. 1.9210 WAS CALCULATED RANGE 20.0 TO 40.0 THE TEMPERATURE RANGE DENSITY (G/ML) *

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

42.4 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY 142.4 __OWING ANTOINE CONSTANTS(EATR 4491): A= -1.02201, B= -223.38, C= 20.0 TO 40.0 DEG. CENT. REFERENCE:SO/R/667 .OSITY(CENTIPOISE)= 3.521 VISCOSITY (CENTIPOISE)= FOLLOWING ANTOINE RANGE 뿙

**** OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: 5.0./R/544 •••• EQUATION: SURFACE TENSION(DYNES/CM)* 44.1900 - .1218*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O

WERE USED TO CALCULATE THE SURFACE TENSION 44.2 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPENATURE RANGE Ī

DETERMINED OVER THE TEMPERATURE RANGE RESTAENCE: -18 TO .1 DEG C ETF100-41V4 MELTING POINT (DEG. CENT.) * -1.2 REE MENCE. ... REPARTION: REFRACTIVE INDEX(ND)* 1.6201 WAS CALCULATED FROM THE EQUATION: 1.6201 - .00050*TEMPERATURE(C.) 40.0 DEG. CENT. REFERENCE: S.O./R/667 20.0 TO

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. PRESSURE = 43.66 VOLUME CC/NOLE DENSITY TEMPERATURE 429.11 00/750 표

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .053 DIFFUSION COEF.

CENT I POTSE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 7.70-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM,48,23(1944) MODIFIED SUTHERLANDS

DEGREES ö 7 1034 COMPOUND EA END OF

MURBER PAGE

Appendix B

UNCL

37

GENERAL REFERENCE: 5.0./R/667 1 1034 AT 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 207.3 1034 EZ OF PROPERTIES OF COMMON NAME: SUMMARY

DETERMINED OVER THE 6.40361, 8= 1237.03, C= 155.2 REFERENCE: S.O./R/561 HIGH PURITY TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERI WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT.

15.8 VAPUR PRESSURE(TURR)= .22+00 ESTIMATED BOILING POINT(CENT,)= 195.9 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILI3/(M3/METER CUBED)= .25+04

VOLATELET (#35/WETER CUBED)= ,25+04 VOLATELETY(MILLIMOLE/ METER CUBED)= .12+02 ++*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ++***

.00167 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML)* 1.8876 MAS CALCULATED FROM THE EQUATION: DENS.:7* 1.9210 - THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/867

TEMPERATURE 142.4 DETERMINED OVER THE TEMPERATUR WERE USED TO CALCULATE THE VISCOSITY ö -1.02201, B= -223.38, 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/667 FOLLDWING ANTOINE CONSTANTS (EATR 4491): A.

44.1900 -IHE

REFERENCE: S.O./R/544 REFERENCE: -18 TO .1 DEG C ETF100-41V4 .1218*TEMP.(C.) 40.0 DEG. CENT. R 41.8 DYNES/CH 20.0 10 VISCOSITY(CENTIPOISE) = 2.257
EQUATION: SURFACE TENSION(DYNES/CM) = 44.
DETERMINED OVER THE TEMPERATURE RANGE 20
WERE USED TO CALCULATE THE SURFACE TENSION -1.2 MELTING POINT (DEG. CENT.) .

DETERMINED OVER THE TEMPERATURE BANGE ND)* 1.6201 - .00050*TEMPERATURE(C.) 40.0 DEG. CENT. REFERENCE: S.D./R/667 REFRACTIVE INDEX(ND)= 1.6101 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)= 1.6201 - .00050*TEMPERATURE(20.0 10

ZHURN. FIZ KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE DENSITY TEMPERATURE VOLUME 1

ATE. 43.66 CC/MOLE 344.72 DEG C 6014

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .061 DIFFUSION COEF.

VISCOSITY OF VAPOR # 8.36-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) . VISCOSITY OF VAPOR = 8.36-03

20.0 DEGREES C. Ą 1034 END OF COMPOUND EA

5

PAGE NUMBER B-

Appendix B

UNCL

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: S.O./R/667 DETERMINED OVER THE 25.0 DEGREES CENTIGRADE TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERENCE: S.O./R/561 HIGH PURITY WARE 15ED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 207.3 OF PROPERTIES OF EA 1034 AL SURMARY VAPOR PRESSURE(TORR)=

STANKE MAKEN

.00167 *TEMP.(C.) DETERMINED OVER ESTIMATED BOILING POINT(CENT.) = 195.9
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.5
VOLATILITY(MG/METER CUBED) = .39+04 VOLATILITY(MILLIMOLE/ METER CUBED) = .19+02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** N: DENSITY= 1.9210 - REFERENCE: S.O./R/667 DENSITY(G/ML) = 1.8793 WAS CALCULATED FROM THE EQUATION: DENSITY= 11E TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.

42.4 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY 142.4 .1218*TEMP.(C.) ű B= -223.38, -1.02201, THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.0;
RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE:SO/R/667 VISCOSITY(CENTIPOISC)= 2.053 EQUATION: SURFACE TENSION(DYNES/CM)= DETERMINED OVER THE TEMPERATURE RANGE

REFERENCE: S.O./R/544 MELTING POINT (DEG. CENT.) & -1.2 REFERENCE: -18 TO .1 DEG C ETF100-41V4 REFRACTIVE INDEX(ND)= 1.6076 WAS CALCULATED FROM THE EQUATION: 40.0 DEG. CENT. 44.1900 -20.0 TD WERE USED TO CALCULATE THE SURFACE TENSION MELTING POINT (DEG. CENT.) = -1.2 REP

DETERMINED OVER THE TEMPERATURE RANGE REFRACTIVE INDEX(ND) = 1.6201 - .00050+TEMPERATURE(C.) 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE 43.66 DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MULE 5014 429.11 344.72 THE

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944). VISCOSITY OF VAPOR = 8.53-03 (

END OF COMPOUND EA 1934 AT 25.6 DEGREES C.

Ξ

PAGE NUMBER 8-

UNCLASSIFIED

GENERAL REFERENCE: S.D./R/667 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 207.3 Y 1034 SUMMARY OF PROPERTIES OF EA COMBON NAME:

DETERMINED OVER THE 6.40361, B= 1237.03, C= 155.2 REFERENCE: S.O./R/561 HIGH PURITY THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.40. TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERI WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

. 12+01 VAPOR PRESSURE(TORR) =

4.5

HEAT OF VAPORIZATION(KILOCALORIES/NOLE)=
VOLATILITY(MG/METER CUBED)=
***** MADDITY

.00167 +TEMP.(C.) DETERMINED OVER N: DENSITY= 1.9210 - REFERENCE: 5.0./R/667 1.8542 WAS CALCULATED FROM THE EQUATION: DENSITY= 40.0 DEG. CENT. 20.0 TO THE TEMPERATURE RANGE DENSITY (G/ML) =

42.4 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY 142.4 ů -1.02201, 8= -223.38, 40.0 DEG. CENT. REFERENCE: SO/R/667 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. VISCOSITY(CENTIPOISE)= RANGE

REFERENCE: S.O./R/544 .1218*TEMP.(C.) 40.0 DEG. CENT. 44.1900 -EQUATION: SURFACE TENSION (DVNES/CM)= 뿚

DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: -18 10 .1 DEG C ETF100-41V4 DETERMINED GYER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENWERE USED TO CALCULATE THE SURFACE TENSION 39.3 DYNES/CM MELTING POINT (DEG. CENT.) " -1.2 REFERENCE: -18 TO .1 DEGREFACTIVE INDEX(ND) 1.6001 WAS CALCULATED FROM THE EQUATION:

.00050+TEMPERATURE (C.) 40.0 DEG. CENT. REFERENCE: S.O./R/667 REFRACTIVE INDEX(ND)= 1.6201 -20.0 10 ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATE? USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE 7 7 7 7

ATM. CC/MOLE 344.72 32/KS

CM.SQ./SEC GALCULATED FOR VAPOR IN AIR .071 DIFFUSION COEF.

VISCOSITY OF VAPOR = 9.02-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING : ABOVE CRITICAL PROPERTIES AND THE MGDIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 9.02-03

40.0 DEGREES C. ¥ END OF COMPOUND, EA 1034

PAGE NUMBER B-

Appendix B

SSIFIED NCI

DETERMINED OVER THE TEMPERATURE RANGE DETERMINED OVER THE

.00095 *TEMP.(C.) DETERMINED OVER ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** . 1.2599 REFERENCE: CRLR542 1.2514 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CI THE TEMPERATURE RANGE DENSITY (G/ML) =

VOLATILITY(MG/METER CUBED)= .71-01 VOLATILITY(MILLIMOLE/ METER CUBED)= .27-03 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

1.61

HEAT OF VAPORIZATION (KILOCALORIES/MOLE)=

ESTIMATED BOILING POINT (CENT.) .

REFERENCE: SYNTHETIC T.FP 5.8, TOWN 524 REFERENCE: CRLR542 FP 7.6C EQUATION: SURFACE TENSION(UNNES/CM) # 48.2600 - .1106*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 WERE USED TO CALCULATE THE SURFACE TENSION 47.3 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 20.0 DEGREES CENTIGRADE 18.300 VISCOSITY (CENTIPOISE)= 뿔

REFRACTIVE INDEX(ND) = 1.5440 WAS CALCULATED FROM THE EQUATION:

EE CENT. REFERENCE: CRLR542 ALSO GIVES 4.9 760.0 MM OF HG REFERENCE: CRLR542 CAL DECOMP REFERENCE: CRLR520 CAL. REFERENCE: CRLR542 +OR- .01 PERCENT 1.5478 - .00042*TEMPERATURE(C.) (DEG. CENT. REFERENCE: CRLR542 FP 5.4 24.00 AT .0 DEGREE CENT. REFER 357.0 AT 8.97 4,65 AT BOILING POINT, (DEG. CENTIGRADE) - FREEZING POINT (DEG. CENT.) -REFRACTIVE INDEX(ND)# SUBLIMATION (KCAL/MOLE)= FUSION(KCAL/MOLE) = 9 HEAT

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 쁖

24.69 CC/MOLE 684.82 515.89 3844

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF.

CENTIPOISE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM,48.23(1944) THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING T Modified Sutherlands Eq., J.Phy.Chem,48.23(1944)

9.0 DEGREES C. ¥ 1036 END OF COMPOUND EA

PAGE NUMBER B-

Appendix B

***** PLEASE NOTE:

THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT, THEREFORE THE PROPERTIES

263.2

PROPERTIES OF

SUMMARY OF

9.53000, 8= 4191.00, C= 273.2 DETEI REFERENCE: CRLR542 HIGH PURITY FM 8.85

140 DEG

MELETING POINT IN LIEU OF

GENERAL REFERENCE:

ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE WELTING POINT OR FREEZING POINT. *****

9.53000,

USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

70.0 DEG. CENT.

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A.

50.0 10

TEMPERATURE RANGE

A CONTRACTOR

FIE

PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT, THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT, ***** CRLR542 DETERMINED OVER THE POINT IN LIEU OF -20 DES GENERAL REFERENCE: MELATING 263.2 SUNMARY OF PROPERTIES OF EA

THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* 9.53000, B* 4191.00, C* 273.2 TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT. REFERENCE: CRLR542 HIGH PURITY FP WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)=

ESTIMATED BOILING POINT (CENT.)*

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** VOLATILITY(MILLIMOLE/ METER CUBED)= 19.1 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .71-01

.00095 *TEMP.(C.) DETERMINED DVER 1.2599 REFERENCE: CRLR542 1.2514 WAS CALCULATED FROM THE EQUATION: DENSITY PANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: C THE TEMPERATURE PANGE DENSITY (G/ML) =

*** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: SYNTHETIC T, FP 5.8, TDMR 524 REFERENCE: CRLR542 FP .1106*TEMP.(C.) 40.0 DEG. CENT. 20.0 DEGREES CENTIGRADE 48.2600 -20.0 TO DETERMINED OVER THE TEMPERATURE RANGE 18.300 AT SURFACE TENSION (DYNES/CM)= VISCOSTIY(CENTIPOISE)*

WERE USED TO CALCULATE THE SURFACE TENSION 47.3 DYNES/CM **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE TEMPERATURE RANGE REFRACTIVE INDEX(ND)= 1.5440 MAS CALCULATED FROM THE EQUATION:

REFERENCE: CRLR542 ALSO GIVES 4.9 OF MG REFERENCE: CRLR542 CAL DECOMP REFERENCE: CRLR520 CAL. REFERENCE: CRLR542 +OR- .01 PERCENT REPRACTIVE INDEX(ND)= 1.5478 - .00042*TEMPERATURE(C.) I 15.0 TO 25.0 DEG. CENT. REFERENCE: CRLR542 FP 5.4 SUBLIMATION(KCAL/MOLE)= 24.00 AT .0 DEGREE CENT. REFERENCE FUSION(KCAL/MDLE)= 4.65 AT .0 DEGREE CENT. REFERENCE 760.0 MM OF HG 357.0 AT BOLLING POINT, (DEG. CENTIGRADE)= FREEZING POINT (DEG. CENT.)= HEAT

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DCNSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE AIM. 표

8.97

684.82

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF.

VISCOSITY OF VAPOR = 5.27-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE BH1. SNISA MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) VAPOR WAS ESTIMATED VISCOSITY OF THE

9.0 DEGREES ۲ END OF COMPOUND EA 1036

PAGE NUMBER

.00095 *TEMP.(C.) DETERMINED OVER GENERAL REFERÊNCE: CRLR542 THEREFCRE THE LIQUID PROPERTIES ARE DETERMINED OVER THE RANGE **** TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT. REFERENCE: CRLR542 HIGH PURITY FP 8.85 VAPOR PRESSURE(TORD). SUMMARY OF PROPERTIES OF EA 1036 AT .0 DEGREES CENTIGRADE COMMON NAME: T FORMULA WEIGHT: 263.2 GEN THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THI ESTIMATED BOILING POINT(CENT.)= 357.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 19.1
VOLATILITY(MG/METER CUBED)= .24-01 VOLATILITY(MILLIMOLE/ METER CUBED)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 1.2599 -N: DENSITY= 1.2590 REFERENCE: CRLR542 DENSITY(G/ML)= 1.2599 WAS CALCULATED FROM THE EQUATION: THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REF ***** WARNING THE REQUESTED TEMPERATURE 15 BELOW THE ME VALID ONLY FOR SUPECOOLED LIQUID AND NOT THE SOLID ****

5.8. TOMR SYNTHETIC T.FP ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE REFERENCE:

524

RANGE

REFERENCE: CRLR542 FP 7.6C EQUATION: SURFACE TENSION(DYNES/CM) = 48.2600 - .1106*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 WEPF USED TO CALCULATE THE SURFACE TENSION 48.3 DYNES/CM +*** #ARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 20.0 DEGREES CENTIGRADE 48.2600 - .1106*1E 20.0 TO 40.0 DEG. CE VISCOSITY(CENTIPOISE) # 18.300 AT EQUATION: SURFACE TENSION(DYNES/CM) # DETERMINEO OVER THE TEMPERATURE RANGE 뿔

DETERMINED OVER THE TEMPERATURE RANGE 1.5478 - .00042*TEMPERATURE(C.) DEG. CENT. AFFERENCE: CRLR542 FP 5. INDEX (ND) = 1.5478 WAS CALCULATED FROM THE EQUATION: .O DEGREE CENT. REFRACTIVE INDEX(ND)= 15.0 TO 25.0 I REFRACTIVE

T. REFERENCE: CRLR520 CAL.
REFERENCE: CRLR542 ALSO GIVES 4.9
OF HG REFERENCE: CRLR542 CAL DECOMP REFERENCE: CALRS42 +OR- . 01 PERCENT 760.0 MM OF HG O DEGREE CENT. 357.0 SUBLIMATION(KCAL/MOLE) = 24.00 AT FUSION(KCAL/MOLE) = 4.65 AT HEAT OF FUSION(KCAL/MOLE) = 4.05 BOILING POINT, (DEG. CENTIGRADE) = FREEZING POINT (DEG. CENT.) = ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME CC/NOLE DENSITY TEMPERATURE 표

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF.

VISCOSITY OF VAPOR = 5.07-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)

DEGREES ¥ 1036 END OF COMPOUND EA

ŭ NUMBER 10-

GENERAL REFERENCE: CRIR542 20.0 DEGREES CENTIGRADE 1036 AT 20.0 DEGR! FORMULA WEIGHT: 263.2 1036 5 SUBMARY OF PROPERTIES OF COMMON NAME: 1

9.53000, B= 4191.00, C= 273.2 DETERMINED OVER THE REFERENCE: CRLR542 HIGH PURITY FP 8.85 CONSTANTS(EATR 4491): A= 70.0 DEG. CENT. 50.0 10 FOLLOWING ANTOINE TEMPERATURE RANGE

FOLLOWING FOUR PROPERTIES: TAPOR PRESSURE(TORR)= WERE USED

19.1 HEAT OF VAPORIZATION(KILOCALORIES/MDLE)= VOLATILITY(MG/METER CUBED)= .25+00 357.1 ESTIMATED BOILING POINT (CENT.).

VOLATILITY(MG/WETER CUBED) = .25+00 VQLATILITY(MILLIMOLE/ METER CUBED) = .94-03 +++** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE ++++*

.00095 +TEMP.(C.) DETERMINED OVER 1.2599 -REFERENCE: CRLR542 1.2409 WAS CALCULATED FROM THE EQUATION: DENSITY= 30.0 DEG. CENT. 20.0 TO TEMPERATURE RANGE DENSITY (G/ML) = Ŧ

REFERENCE: SYNTHETIC T, FP 5.8, TOMR 524 REFERENCE: CRLR542 FP 7.6C .1108*TEMP.(C.) 40.0 DEG. CENT. 20.0 DEGREES CENTIGRADE 20.0 TO 48.2600 DETERMINED OVER THE TEMPERATURE RANGE 20 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TEMSITY (DYNES/CM) = VISCOSITY(CENTIPOTSE)= 뿚

DETERMINED OVER THE TEMPERATURE RANGE THE SURFACE TENSION 46.0 DYNES/CM 1.5394 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX (ND) =

.00042*TEMPERATURE(C.) . REFERENCE: CRLR542 FP 5. 1.5478 -25.0 DEG. CENT REFRACTIVE INDEX(ND)= 15.0 10

.0 DEGREE CENT. REFERENCE: CRLR520 CAL.
.0 DEGREE CENT. REFERENCE: CRLR542 ALSO GIVES 4.9
AT 780.0 MM OF MG REFERENCE: CRLR542 CAL DECOMP
REFERENCE: CRLR542 +OR- .01 PERCENT 357.0 SUBLIMATION(KCAL/MOLE) = 24.00 AT FUSION(KCAL/MOLE) = 4.65 AT 8.97 BOILING POINT, (DEG. CENTIGRADE)= FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES MERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE

24.69 DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 3844 515,89 684.82 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 980. DIFFUSION COEF. .

VISCOSITY OF VAPOR . 5.52-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) PAGE NUMBER B- 16

20.0 DEGREES C.

¥

END OF COMPOUND EA 1036

Appendix B

SSIFIED

99

HEAT

ZHUFN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: CRLR542 25.0 DEGREES CENTIGRADE FORMULA MEIGHT: 263.2 7 1036 SUMMARY OF PROPERTIES OF EA

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.53000, B= 4191.00, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 56.0 TO 70.0 DEG. CEHT. REFERENCE: CRLR542 HIGH PURITY FP 8.85 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)=

ESTIMATED BOILING POINT(CENT.)= 357.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 19.1
VOLATILITY(MG/METER CUBED)= .42+00 VOLATILITY(MILLIMOLE/ METER CUBED)= .16-02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

.00095 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML)* 1.2362 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.2599 - THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

524 REFERENCE: SYNTHETIC T.FP 5.8, TONR REFERENCE: CRLR542 FP 7.6C .1106*TEMP.(C.) 20.0 DEGREES CENTIGRADE 48.2600 - .1106*16 20.0 TO 40.0 DEG. CE 18.300 AT VISCOSITY(CENTIPOÍSE)= 呈

EQUATION: SURFACE TENSION(DYNES/CM) = 48.2600 - .1106*TEMP.(C EQUATION: SURFACE TENSION SURFACE 20.0 TO 40.0 DEG. CENT. DETERMINED DVER THE TEMPERATURE 20.0 TO 40.0 DEG. CENT. WERE USED TO CALCULATE THE SURFACE TENSION 45.5 DYNES/CM REFRACTIVE INDEX(ND) = 1.5373 WAS CA!CULATED FROM THE EQUATION: REFRACTIVE INDEX(ND) = 1.5478 - .00042*TEMPERATURE(C.) 15.0 TO 25.0 DEG. CENT. REFRENCE: CRLR542 FP 5.4 HEAT DF SUBLIMATION(KCAL/MOLE) = 24.00 AT .0 DEGREE CENT. REFERENCE TENT.

DETERMINED OVER THE TEMPERATURE MANGE

E CENT. REFERENCE: CRLR542 ALSO GIVES 4.9 760.0 MM OF HG REFERENCE: CRLR542 CAL DECOMP REFERENCE: CRLR520 CAL. .01 PERCENT REFERENCE: CRLR542 +OR-ODEGREE CENT.
357.0 AT 760 HEAT OF SUBLIMATION(KCAL/MOLE) = 2. HEAT OF FUSION(KCAL/MOLE) = 4.69 BUILING POINT, (DEG. CENTIGRADE) = FHEEZING POINT (DEG. CENT.) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM.

24.69 515.89 . 3844

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 0.00 DIFFUSION COEF. VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE Eg., J.Phy.Chem.48,23(1844) VISCOSITY OF VAPOR = 5.63-03 CENTIPGISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TH MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

25.0 DEGREES C. ¥ 1036 END OF COMPOUND EA

PAUE NUMBER

Appendix B

≝ SSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: CRLR542 1 1036 AT 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 263.2 SUMMARY OF PROPERTIES OF EA COMMON NAME:

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: CREASA2 MIGH PURITY FP 0.85
VAPOR PRESSURE() 2) = .14-03

ESTIMATED BOILIN POINT (CENT.) = 357.1 HEAT OF VAPORIZA" "N(KILOCALORIES/WOLE)"

VOLATILITY(MG/ME) CURED). .19+01 JLATILITY(MILLIMOLE/ METER CUBED). .72-02 19.1

.00095 +TEMP.(C.) DETERMINED OVER 1.2599 -REFERENCE: CRLR542 1219 WAS CALCULATED FROM THE EQUATION: DENSITY. : 20.0 10 30.0 DEG. CENT. REFERENCE: CR "EMPEHATURE : DENSITY (G/ML) *

OF THE DATA TEMPERATURE RANGE **** MARNING: The ABOVE VALUES ARE EXTRAPOLATED GUT

REFERENCE: SYNTHETIC T.FP 5.8, TOMR REFERENCE: CRLR542 FP 7.6C . 1106+TEMP. (C.) 40.0 DEG. CENT. 20.0 DEGREES CENTIGRADE 48.2600 -EQUATION: SURFACE TENSION (DYNES/CM) = 18.300 AT VISCOSITY(CENTIPOISE)=

524

DETERMINED OVER THE TEMPERATURE RANGE IVE INDEX(ND)= 1.5478 - .00042*TEMPERATURE(C.) 15.0 TO 25.0 DEG. CENT. REFERENCE: CRLR542 FP 5. DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENTER USED TO CALCULATE THE SURFACE TENSION 43.8 DYNES/CMREFRACTIVE INDEX(ND)= 1.5310 MAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)=

DEGREE CENT, REFERENCE: CRIR520 CAL. SECONT. REFERENCE: CRIR542 ALSO GIVES 4.9 T60.0 MM OF HG REFERENCE: CRIR542 CAL DECOMP .OI PERCENT A"FERENCE: CRLR542 +DR" .O DEGREE CENT. .O DEGREE CENT. 357.0 AT SUBLIMATION(KCAL/MOLE)= 24.00 AT FUSION(KCAL/MOLE)= 4.65 AT HEAT OF SUBLIMATION(KCAL/MOLE) = 4.6f HEAT OF FUSION(KCAL/MOLE) = 4.6f BCILING POINT, (DEG. CENTIGRADE) = FREEZING POINT (DEG. CENT.) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

ATM. CC/MOLE .3844 SIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 440. DIFFUSION COEF.

VISCOSITY OF VAPOR # 5.96-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 5,96-03 (

40.0 DEGREES C. ¥ END OF COMPOUND EA 1036

1

PAGE NUMBER B-

N-MUSTARD-3 .00098 +TEMP.(C.) DETERMINED OVER TEMPERATURE 173.2 DETERMINED OVER THE TEMPERATUL WERE USED TO CALCULATE THE VISCOSITY ETF 100-41V4 COMMON NAME: HNS FORMULA WEIGHT: 204.5 GENERAL REFERENCE: ETF100-41V4
PLEASE NOTE: THE REQUESIED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES
ESTIMATED FOR LIQUIDS AND VAPORS ARE PPOVIDED AT THE MELTING POINT OR FREEZING POINT. **** DETERMINED OVER THE MELATING POTHE IN LIEU OF -NO 1250 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** RANGE **** .36-01 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)* .61-03 VAPOR PRESSURE(TORR)= .61-03
ESTIMATED BOILLING POINT(CENT.)= 257.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.1
VOLATILITY(MG/METER CUBED)= .74+01 VOLATILITY(MILLIMOLE/ METER CUBED)= +**** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OU. OF THE DATA TEMPERATURE 273.2 1.2596 MEFERENCE: SO/R/643 B=-1250.00, C= 1.2632 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SA FORMULA WEIGHT: -5.32800, 20.0 TO 35.0 DEG. CENT. REFERENCE: SO/R/643 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. SUMMARY OF PROPERTIES OF 205 VISCOSITY (CENTIPOISE)= THE TEMPERATURE RANGE DENSITY(G/NL)= ****

RANGE THE

.1290*TEMP.(C.) i 44.0900

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/643 WERE USED TO CALCULATE THE SURFACE TENSION 44.6 DYNES/CM +*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** EQUATION: SURFACE TENSION(DYNES/CM)= 뜻

DETERMINED OVER THE TEMPERATURE RANGE MELTING POINT (UEG. CEN):

REFRACTIVE INDEX(ND): 1.5057 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND): 1.5042 - .00040+TEMPERATURE(C.) DET

20.0 IG 35.8 DEG. CENT. REFERENCE: SO/R/643

COLLOS AT 25.0 DEGREE CENTIGRADE REFERENCE: ETF100-41V4 -3.7 POINT (DEG. CENT.) . MELTING

REFERENCE: ETF100-41V4 APP .800-02 AT SOLURILITY (G/100G SOLVENT)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure ATM. CC/MOLE **GE/CC** 표

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF.

529.83

498.94

CENTIPOISE VE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR . 5.30-03 ABOVE VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TI MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

-3.7 DEGREES C. ۲ END OF COMPOUND EA 1053

PAGE NUMBER B-

MULA WEIGHT: 204.5 GENERAL REFERENCE: ETF100-41V4 M-MUSTARD-3 THE MELTING POINT, THEREFORE THE LIQUID PROPERTIES ARE .00098 *TEMP.(C.) DETERMINED OVER 8.55297, 8= 2856.46, C= 246.4 DETERMINED OVER THE REFERENCE: COMB.50/R/643, W11451, NB8821 VOLATILITY(MG/METER CUBED)* .11+01 VOLATILITY(MILLIMOLE/ METER CUBED)* .55-02 ***** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 1 THE REQUESTED TEMPERATURE IS BELOW THE MI SUPECCOLED LIQUID AND NOT THE SOLID **** FORMULA THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. 8.55;
TEMPERATURE ANGE 25.0 TO 186.0 DEG. CENT. REFERINGE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)* .87-04
ESTIMATED BOILING POINT(CENT.)* 257.2 ESTIMATED BOILING POINT(CENT.)= 257.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.3
VOLATILITY(MG/METER CUBED)= .11+01 VOLATIL SUMMARY OF PROPERTIES OF EA **** MARNING VALIU ONLY FOR

-20.0 DEGREES CENTIGRADE

1053

1

N. DENSITY= 1.2596 REFERENCE: SO/R/643 DENSITY(G/ML)= 1.2790 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

173.2 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY -5.32800, B=-1250.00, C= 273.2 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -5.3; RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE:SO/R/643 ie 20.0 TO 35.0 DEG. VISCOSITY(CENTIPO(SE)* UNCL/

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: SO/R/643 EQUATION: SURFACE TENSION(DYNES/CM)* 44.0900 - .1290*1EMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/WERE USED TO CALCULATE THE SURFACE TENSION 46.7 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE EQUATION: SURFACE TENSION(DYNES/CM) # 44.00 DETERMINED OVER THE TEMPERATURE RANGE 20 WERE USED TO CALCULATE THE SURFACE TEMSION SSIFIED

DETERMINED OVER THE TEMPERATURE RANGE MELTING POINT (DEG. CENT.) = -3.7 REFERENCE: ETF100-41/4
REFRACTIVE INDEX(ND)= 1.5122 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5042 - .00040*TEMPERATURE(C.) DET
COLLOS: 10.010, 35.8 DEG. CENT. REFERENCE: 53/R/643
COLLOS: 10.010, 35.8 DEG. CENT. REFERENCE: 53/R/643

REFERENCE: ETF100-41V4 APP WATER .800-02 AT SOLUBILITY(G/100G SOLVENT)

FIZ KHIM. ZHURN. FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE CC/NOLE 529.83 DEG C 498.94 11

201 (1963)

37.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .034 DIFFUSION COEF.

31.23

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISUOSITY OF VAPOR # 4.91-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY, CHEM, 48, 23(1944)

-20.0 PEGREES C. 7 1053 END OF COMPOUND EA

8 NUMBER PAGE

GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-3 . O DEGREES CENTIGRADE 204.5 FORMULA MEIGHT: (653 E SUMMARY OF PROPERTIES OF COMMON NAME: HN3

8.55297, 8= 2856.46, C= 246.4 DETERMINED OVER THE REFERENCE: COMB.SO/R/643,M11451,NB0821 NE CONSTANTS(EATR 4491): A= 25.0 TO 186.0 DEG. CENT. THE FOLLOWING ANTOINE TEMPERATURE RANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: .92-03 VAPOR PRESSURE(TORR)=

VOLATILITY(MG/METER CUBED)* .11+02 VOLATILITY(MILLIMOLE/ METER CUBED)* .54-01 16.0 ESTIMATED BOILING POINT (CENT.) = 257.2 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) =

.00098 *TEMP.(C.) DETERMINED OVER 1.2596 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2596 RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/643 THE TEMPERATURE RANGE DENSITY (G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE *****

73.2 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY 273.2 -5.32800, B=-1250.00, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -5.3; RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE:SO/R/643

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** VISCOSI FY (CENTIPOISE)*

WERE USED TO CALCULATE THE SURFACE TENSION 44.1 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE REFERENCE: .1290+TEMP.(C.) 40.0 DEG. CENT. 1 20.0 10 44.0900 DETERMINED OVER THE TEMPERATURE RANGE 20 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM) = Ŧ

REFERENCE: ETF100-41Y4 APP WATER DETERMINED OVER THE TEMPERATURE RANGE REFRACTIVE INDEX(ND) = 1.5042 - .00040*rEMPERATURE(C.) 20,0 TO 35.8 DEG. CENT. REFERENCE: SO/R/643 MELTING POINT (DEG. CEMT.) = -3.7 REETGENCE: ETF100-41V4 REFRACTIVE INDEX(ND)= 1.5042 MAS CALCULATED FROM THE EQUATION: REEFGENCE: ETF100-41V4

25.0 DEGREE CENTIGRADE 800-02 AT SOLUBILITY(G/100G SOLVENT) ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME DENSITY TEMPERATURE 146

ATE. CC/MOLE 198.94 3860 \ | | | |

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION COEF.

CENT [POISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.38-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

.0 DEGREES

₹

END OF COMPOUND EA 1053

PAGE NUMBER B- 21

SSIFIED

REFERENCE: ETF100-41V4 APP WATER

GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-3 1 1053 AT 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 204.5 E E COMMON NAME: HN3 SUMMARY OF PROPERTIES OF

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.55297, B* 2850.46, C* 246.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 186.0 DEG. CENT. REFERENCE: COMB.SO/R/643.W11451.NB8121
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PIESSURE(TORR)* .68-02
VAPOR PIESSURE(TORR)* .68-02
VAPOR PIESSURE(TORR)* .68-02
HEAT DE VAPORIZATION(KILOCALORIES/MOLE)* 15.8
HEAT DE VAPORIZATION(KILOCALORIES/MOLE)* .76+02
VOLATILITY(MC/METER CUBED)* .37+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATEO OUT OF THE DATA TEMPERATURE RANGE *****

.00098 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.2401 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2598 - THE TEMPERATURE RANGE 20.0 TD 40.0 DEG. CENT. REFERENCE: SO/R/643 THE TEMPERATURE RANGE

TEMPERATURE -5.32800, B=-1250.00, C* 273.2 DETERMINED OVER THE TEMPERATUR 2/643 ANTOINE CONSTANTS(EATR 4491): A. FOLLOWING RANGE III

REFERENCE: SO/R/643 . 1290+TEMP. (C.) GE 20.0 TO 35.0 DEG, CENT. REFERENCE: SO/R/643 VISCOSITY(CENTIPOISE) - .086 EQUATION: SUFFACE TENSION(DYNES/CM) = 44.0900 -DETERNINED OVER THE TEMPERATURE RANGE 20.0 TO WERE USED TO CALCULATE THE SURFACE TENSION MELTING POINT (DEG. CENT.) = -3.7 REFERENCE THE

40.0.DEG. CENT. 41.5 DYNES/CH

1.4962 WAS CALCULATED FROM THE EQUATION: REFERENCE: ETF100-41V4 MELTING POINT (DEG. CENT.) . REFRACTIVE INDEX(ND)=

.00040*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE 35.8 DEG. CENT. REFERENCE: SO/R/643 .800-02 AT 25.0 DEGREE CENTIGRADE .800-02 AT REFRACTIVE INDEX(ND)= SOLUBILITY(G/100G SOLVENT) ZHURN. FIZ KHIM. 37. 201(1983) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 1 1 1

ATM. 31.23 CC/NOLE 529.83 498.94 GM/CC 3860

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .046 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.85-03 CENTIPOISE

20.0 DEGREES C. ¥ 1053 END OF COMPOUND EA

22

PAGE NUMBER 8-

ZHURN. FIZ KHIM. 37. 201(1963)

REFERENCE: ETF100-41V4 APP WATER

GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-3 .58+00 .0009e *TEMP.(C.) DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.55297, B* 2856.46, C* 246.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 186.0 DEG. CENT. REFERENCE: COMB.SO/R/643.W11451.NB8021 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 25.0 DEGREES CENTIGRADE VOLATILITY(MG/METER CUBED)= .12403 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.2352 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2596 -THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SG/R/643 FORMULA WEIGHT: 1053 COMMON NAME: HN3 HEAT OF VAPORIZATION (KILDCALORIES/MOLE)= SUMMARY OF PROPERTIES OF ESTIMATED BOILING POINT (CENT.) * 11-01 VAPOR PRESSURE(TORR)= THE TEMPERATURE RANGE

273.2 DETERMINED OVER THE 1EMPERATURE VERE USED TO CALCULATE THE VISCOSITY DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: SO/R/643 INDEX(ND)= 1.4942 Who contains .00040*1EMFERS. REFRACTIVE INDEX(ND)= 1.5042 - .00040*1EMFERS. 25.0 DEGREE CENTIGRADE .1290*TEMP.(C.) FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -5.32800, B=-1250.00, C= 40.0 DEG. CENT. SE 20.0 TO 35.0 DEG. CENT. REFERENCE:SO/R/643
VISCOSITY(CENTIPOISE)= .073
EQUATION: SURFACE TENSION(DYNES/CM)= 44.0900 - .1290*TEI
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CEI
WERE USED TO CALCULATE THE SURFACE TENSION 40.9 DYNES/CM
MELTING POINT (DEG. CENT.) = -3.7 REFERENCE: ETF100-41V4
REFRACTIVE INDEX(ND)= 1.4942 WAS CALCULATED FROM THE EQUATION: RANGE

PROPERTIES AND THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF ATM. 31.23 CC/MOLE .048 DIFFUSION COEF. DEGC 498.94 3860 SM/CC

25.0 DEGREES C. 7 1053 END OF COMPOUND EA

PAGE NUMBER

VISCOSITY OF VAPOR . 5.97-03 CENTIPOISE

Appendix B

포 SSIFI

SOLUBILITY(G/100G SOLVENT)

REFERENCE: ETF100-41V4 APP WATER

GENERAL REFERENCE: ETF100-41V4 M-MUSTARO-3 .00098 +TEMP.(C.) DETERMINED OVER TEMPERATURE RANGE 25.0 TO 186.0 DEG. CENT. REFERENCE: COMB.SO/R/643,W11451,NB8821
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: .20+01 49.0 DEGREES CENTIGRADE ETER CUBED) - .40+03 VOLATILITY(MILLIMOLE/ METER CUBED) - 1.2206 WAS CALCULATED FROM THE EQUATION: DENSITY - 1.2596 -N: DENSITY= 1.2596 -REFERENCE: SO/R/643 204.5 A 1053 AT 49; FORMULA WEIGHT: 40.0 DEG. CENT. 15.6 SUMMARY OF PROPERTIES OF EA EX ESTIMATED BOILING POINT(CENT.)* 257.2 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* 20.0 10 ESTIMATED BOILING POINT (CENT.) = VOLATILITY (MG/METER CUBED)= VAPOR PRESSURE(TORR) = THE TEMPERATURE RANGE DENSITY (G/ML) =

73.2 DETERMINED OVER THE TEMPERATURE WERE USED 10 CALCULATE THE VISCOSITY 273.2 -5.32800, B=-1250.00, C* 35.0 DEG. CENT. REFERENCE: SO/R/643 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= .046 VISCOSITY (CENTIPOISE)= RANGE THE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE ***** REFERENCE: SO/R/643 .1290*TEMP.(C.) 40.0 DEG. CENT. 20.0 TO 44.0900 DETERMINED OVER THE TEMPERATURE RANGE EQUATION: SURFACE TENSION(DYNES/CM) = THE

38.9 DYNES/CM REFERENCE: ETF100-41V4 WERE USED TO CALCULATE THE SURFACE TENSION MELTING POINT (DEG. CENT.) = -3.7 RE

DETERMINED OVER THE TEMPERATURE HANGE 25.0 DEGREE CENTIGRADE .00040*TEMPERATURE(C.) REFRACTIVE INDEX (ND) = 1.4882 WAS CALCULATED FROM THE EQUATION: 35.8 DEG. CENT. REFERENCE: SG/R/643 1.5042 -.800-02 AT REFRACTIVE INDEX(NO)= SOLUBILITY (G/100G SOLVENT) 20.0 TO

ZHURN. FIZ KHIM. 37. 201(1963) PROPERTIES MERE ESTIMATED USING THE METHOD OF FILIPPOV. E VOLUME PRESSURE VOLUME CC/MOLE DENSITY TEMPERATURE FOLLOWING CRITICAL Ħ

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 498.94 . 3860 CM/CC

.054

DIFFUSION COEF. -

VISCOSITY OF VAPOR . 6.33-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM.48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

40.0 DEGREES C. ¥ 1053 END OF COMPOUND EA

ጀ

PAGE NUMBER B-

GENERAL REFERENCE: TDMR94 DETERMINED OVER THE -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: AT 1205 ¥ OF PROPERTIES OF COMMON NAME: SUMMARY

TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFERENCE: TOMR1094, A3804/3, ECTR75032 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: C* 186.4 1700.59. 6.80011, B. THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A.

VAPOR PRESSURE(TORR)=

VOLATILITY(MG/METER CUBED)* .17+00 VOLATILITY(MILLIMOLE/ METER CUBED)* .10-02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 247.5 ESTIMATED BOILING POINT (CENT.)*

.00097 *TEMP.(C.) DETERMINED DVER

1.0999 REFERENCE: STM 109 1.1389 WAS CALCULATED FROM THE EQUATION: DENSITY* RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: ST THE TEMPERATURE RANGE DENSI TY (G/ML) =

173.2 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY 273.2 ٿ -905.78, -2.68053, B≈ FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.68 TE 10.0 TO 35.0 DEG. RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: STM 109 P.2 EQUATION: SURFACE TENSION(DYNES/CM)* 35.0000 -- .1000*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STW
WERE USED TO CALCULATE THE SURFACE TENSION 39.0 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE EQUATION: SURFACE TENSION(DYNES/CM) = 35.0 DETERMINED OVER THE TEMPERATURE RANGE 5.0 WERE USED TO CALCULATE THE SURFACE TENSION

DETERMINED OVER THE TEMPERATURE RANGE 25 TO 50 DEG C. STM109 REFERENCE: REFRACTIVE INDEX(ND) = 1.4469 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND) = 1.4316 - .00038*TEMPERATURE(C.) 10.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2 PLASH POINT, CLOSED CUP(CENTIGRADE) = 78.0 REFERENCE: PTP45 REFRACTIVE INDEX(ND) = 1.4316 -

25.0 DEGREE CENT. RI REFERENCE: TOMR 1094 . 6700 AT -50.00 HEAT CAPACITY (KCAL/MOLE)= FREEZING POINT (DEG. CENT.)=

20.0 DEGREE CENTIGRADE .0 DEGREE CENTIGRADE .720+01 AT SOLUBILITY(G/100G SOLVENT) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. CC/MOLE GM/CC THE

ZHURN. FIZ KHIM. 37. 201(1983)

REFERENCE: ETF100-41 VOL 1 REFERENCE: STUDY 35-48 WATER

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .031 DIFFUSION COEF.

469.10

419.02

VISCOSITY OF VAPOR # 4.64-03 CENTIPOISE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TH MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

-40.0 DEGREES C. ¥ 1205 END OF COMPOUND EA

4 PAGE NUMBER

ፗ SSIFI

GENERAL REFERENCE: TOMR94 -20.0 DEGREES CENTIGRADE BHT: 162.1 GEN 1 1205 AT -20. FORMULA WEJGHT: 2 SUMMARY OF PROPERTIES OF COMMON NAME: GA

186.4 DETERMINED OVER THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* 6.80011, B= 1700.59, C* 126.4 DETE TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFERENCE: TOMR1094,A3804/3,ECTR75032 WERE USED TO CALLULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TOER)=

HEAT OF VAPORIZATION(KILGCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .39+01

RANGE **** VOLATILITY(MG/METER CUBED) .39+01 VOLATILITY(MILLIMOLE/ METER CUBED) . **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

.24-01

.00097 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.1194 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0999 - THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: STM 109

173.2 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCUSITY **** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 273.2 ٿ -905.78 -2.68053, B= iE 10.0 TO 35.0 DEG. CENT. REFERENCE:TDMR 1094 VISCOSITY(CENTIPOLISE)= 7.897 FOLLOWING ANTOINE CUNSTANTS (EATR 4491): A= ANGE 뿔

P.2 REFERENCE: STM DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STA WERE USED TO CALCULATE THE SURFACE TENSION 37.0 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE . 1000+TEMP. (C.) 35.0000 EQUATION: SURFACE TENSION(DYNES/CM)= TE

DETERMINED OVER THE TEMPERATURE RANGE 25 TO 50 DEG C, STM109 1.4392 WAS CALCULATED FROM THE EQUATION: VDEXIND)= 1.4316 - .00038*TEMPERATURE(C.) REFRACTIVE INDEX(ND)= 1.4316 - .00038*IEMFERN. 10.0 TO 40.0 DEG. CENT. REFERENCE: SIM 109 P.2 TO 40.0 DEG. CENT. REFERENCE: PT945 FLASH POINT, CLOSED CUP(CENTIGRADE)= HEAT CAPACITY (KCAL/MOLE) = REFRACTIVE INDEX WD1=

25.0 DEGREE CENT. REFERENCE:
REFERENCE: TOWN 1094
T 20.0 DEGREE CENTIGRADE
T 0.0 DEGREE CENTIGRADE .720+01 AT .980+01 AT .0700 AT -50.00 FREEZING POINT (DEG. CENT.) = SOLUBILITY(S/100G SCLVENT) SOLUBILITY(S/100G SOLVENT)

REFERENCE: ETF100-41 VOL 1 REFERENCE: STUDY 35-48 WATER

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. 뿔

PRESSURE ATH. 31.62 CC/MOLE VOLUME 469.10 DENSITY TEMPERATURE 3456 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .037 CIFFUSION COEF.

CENT I POI SE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.12-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING FHE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

ပ -20.0 DEGREES AT 1205 OF COMPOUND EA

38

PAGE NUMBER

GENERAL REFERENCE: TOMR94 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.80011, B= 1700.59, C= 186.4 DETERMINED DVER THE TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFERENCE: TOMR1094,A3804/3,ECTR75032
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: CENTIGRADE .O DEGREES 162.1 FORMULA WEIGHT: 1205 **M** OF PROPERTIES OF 성 COMMON NAME: SUMMARY VAPOR PRESSURE(TORR) =

RANGE **** VOLATILITY(MG/WETER CUBED) - .45+02 VOLATILITY(MILLIMOLE/ METER CUBED) - ++** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 16.7 ESTIMATED BOILING POINT (CENT.) = 247.5 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = VOLATILITY (MG/METER CUBED) = .45+02

.00097 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML)= 1.0999 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0999 THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: STM 109 DENSITY(G/ML)=

TEMPERATURE 173.2 DETERMINED OVER THE TEMPERATU 273.2 B= -905.78, C= -2.68053, FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.68(3E 10.0 TD 35.0 DEG. CENT. REFERENCE:TDMR 1094 VISCOSITY(CENTIPDISE)= 4.320

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

109 P.2 REFERENCE: STM EQUATION: SURFACE 19NSION(DVNES/CM)* 35.0000 -- .1000*TEM?.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STM
WERE USED TO CALCULATE THE SURFACE TENSION 35.0 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 3 1 1

DETERMINED OVER THE TEMPERATURE RANGE REFRACTIVE INDEX(ND) 1.4316 - .00036*TEMPERATURE(C.) 10.0 TO 40.0 DEG. CENT. FEFERENCE: SIM 109 P.2 FLASH POINT, CLOSED CUP(CENTIGRADE) 78.0 REFERENCE: PTP45 1.4316 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)=

REFERENCE: 20.0 DEGREE CENTIGRADE .0 DEGREE CENTIGRADE 25.0 DEGREE CENT. RE REFERENCE: TOMR 1094 -50.00 .0700 AT HEAT CAPACITY (KCAL/MOLE) = FREEZING POINT (DEC. CENT.) = SULUBILITY(G/100G SOLVENT) SOLUBILITY(G/100G SOLVENT)

.720+01 AT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

ZHURN. FIZ KHIM. 37. 201(1963)

ETF100-41 VOL 1 STUDY 35-48 WATER

REFERÊNCE: REFERÊNCE:

25 TO 50 DEG C, STM109

ATM. CC/MOLE 469.10 G:4/CC .345E

THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .044 DIFFUSION COEF.

CENTIPOISE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.60-03 ABOVE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48.23(1944) VISCOSITY OF THE

.0 DEGREES C. ۲ 1205 END OF COMPOUND EA

2 PAGE NUMBER B-

.00097 +TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: TOMR94 6.80011, B= 1700.59, C= 186.4 DETERMINED OVER THE REFERENCE: TDMR1094,A3804/3,ECTR75032 20.0 DEGREES CENTIGRADE DENSITY(G/ML)= 1.0804 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0999 - THE TEMPERATURE RANGE -40.0 TO 71.0 DEC. FORMULA WEIGHT: 1205 TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: ¥ CONSTANTS(EATR 4491): A= 5.0 TO 152.0 DEG. CENT. 9 A ESTIMATED BOILING POINT(CENT.) = 247.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .32+03 SUMMARY OF PROPERTIES COMMON NAME: . 36-01 VAPOR PRESSURE(TORR)= TEMPERATURE

173.2 DETERMINED DVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: ETF100-41 VOL 1 REFERENCE: STUDY 35-48 WATER REFERENCE: 25 TO 50 DEG C, STM109 REFERENCE: STM 109 P.2 273.2 REFERENCE: TOMR 1094

1 20.0 DEGREE CENTIGRADE

1 20.0 DEGREE CENTIGRADE .1000*TEMP.(C.) 40.0 DEG. CENT. RI B= -905.78, C* (ND)* 1.4316 - .00038*TEMPERATURE(C.) 40.0 DEG. CENT. REFERENCE: STM 109 P.2 REFERENCE: PTP45 WERE USED TO CALCULATE THE SURFACE TENSION 33.0 DYNES/CM REFNACTIVE INDEX(NO)= 1.4240 WAS CALCULATED FROM THE EQUATION: -2.68053, 35.0000 -35.0 DEG. CENT. REFERENCE: TDMR 1094 TIPOISE)* 2.566 5.0 10 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= DETERMINED OVER THE TEMPERATURE RANGE 5 WERE USED TO CALCULATE THE SURFACE TENSION .720+01 AT .980+01 AT .0700 AC -50.90 FLASH POINT, CLOSED CUP(CENTIGRADE)= HEAT CAPACITY (KCAL/MOLE)= .0700 AFREEZING POINT (DEG. CENT.)= .500 EQUATION: SURFACE TENSION(DYNES/CM)= REFRACTIVE INDEX(ND)* SCLUBILITY(G/100G SCLVENT)
SCLUBILITY(G/100G SCLVENT) iE 10.0 TO 35.0 DEG. VISCOSITY(CENTIPOISE)= RANGE Ŧ

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/MOLE 469.10 VOLUME DENSITY TEMPERATURE 419.02 03/E5 무

DIFFUSION COEF. * .051 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL FROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 6.08-03 CENTIPOISE

END OF COMPOUND EA 1205 AT 20.0 DEGREES C.

28

å

PAGE NUMBER

GENERAL REFERENCE: TOMR94 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1205 2 3 OF PROPERTIES OF COMMON NAME: SUBSTARY

A STEEL PROPERTY OF THE STATE OF

DETERMINED OVER THE 6.80011, B* 1700.59, C* 186.4 DE 11 REFERENCE: TDMR1094, A3804/3, ECTR75032 TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: CONSTANTS(EATR 4491): A= THE FOLLOWING ANTOINE

.31+01 .00097 +TEMP.(C.) DETERMINED OVER ETER CUBED) = .49+03 VOLATILITY(MILLIMOLE/ METER CUBED) = 1.0756 MAS CALCULATED FROM THE EQUATION: DENSITY = 1.0999 - RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: STM 109 15.5 HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= 247.5 ESTIMATED BOILING POINT (CENT.) . VOLATILITY(MG/METER CUBED)= VAPOR PRESSURE(TORR) . THE TEMPERATURE RANGE DENSITY (G/ML) =

273.2 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY -2.68053, B= -905.78, C= THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= RANGE

SE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1094 VISCOSITY(CENTIPOISE) = 2.277 EQUATION: SURFACE TENSION(DYNES/CM) = 35.0000 -THE

REFERENCE: STM 109 . 1000*TEMP. (C. 40.0 DEG. CENT. 35.0000 -5.0 10 DETERMINED OVER THE TEMPERATURE RANGE . *

DETERMINED OVER THE TEMPERATURE RANGE (ND) 1.4316 - .00038*TEMPERATURE(C.) 40.0 DEG. CENT. REFERENCE: SIM 109 P.2 1.4221 WAS CALCULATED FROM THE EQUATION: 32.5 DYNES/CM REFRACTIVE INDEX(ND)= REFRACTIVE INDEX (MD)=

REFERENCE: 25 TO 50 DEG C, STM109 REFERENCE: PTP45 REFERENCE: TOMR 1094 25.0 DEGREE CENT. .0700 AT 10.0 70 40.0 DEG. POINT, CLOSED CUP(CENTIGRADE)= HEAT CAPACITY (MCAL/MOLE) = FPEEZING POINT (DEG CENT.) = SOLUBILITY(G/100G SOLVENT)

.720+01 AT -50.00 SOLUBILITY (G/ : 00G SOLVENT)

20.0 DEGREE CENTIGRADE .0 DEGREE CENTIGRADE .980+01 AT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

REFERENCE: ETF100-41 VOL 1 REFERENCE: STUDY 35-48 WATER

PRESSURE ATM. 31.62 CC/MOLE VOLUME DENSITY TEMPERATURE 419.02 3456

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.20-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) PAGE NUMBER B-

ပ

25.0 DEGREES

¥

1205

END OF COMPOUND EA

Appendix

GENERAL REFERENCE: TOWR94 6.80011, B= 1700.59, C= 186.4 DETERMINED OVER THE REFERENCE: IDMR1094, A3804/3, ECTR75032 1 1205 AT 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 162.1 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 14.9 SUMMARY OF PROPERTIES OF EA CONSTANTS(EATR 4491): A= 15.0 TD 152.0 DEG. CENT. VAPOR PRESSURE(TORR)= .19400 ESTIMATED BOILING POINT(CENT.)= 247.5 HEAT OF VAPORIZATION(KILUCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .16+04 COMMON NAME: THE FOLLOWING ANTOINE TEMPERATURE RANGE

TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY DETERMINED OVER THE RANGE

REFERENCE: STM 109

.00097 *TEMP.(C.) DETERMINED OVER

.99+01

VOLATILITY(MG/METER CUBED)= .16+04 VOLATILITY(MILLIMDLE/ METER CUPED)= DENSITY(G/ML)= 1.0610 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0999 --

71.0 DEG. CENT.

-40.0 TO

TEMPERATURE RANGE

DETERMINED OVER THE TEMPERATURE RANGE REFERENCE: STM 109 . 1000*TEMP. (C. 40.0 DEG. CENT. EQUATION: SURFACE TENSION(DYNES/CM)= 35.0000 - .1000*TEN DETERMINED DVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CEN WERE USED TO CALCULATE THE SURFACE TENSION 31.0 DYNES/CM REFRACTIVE INDEX(ND)= 1.4163 WAS CALCULATED FROM THE EQUATION:

REFERENCE: 25 TO 50 DEG C, STM109 FLASH POINT, CLOSED CUP(CENTIGRADE) = 78.0 DEFERENCE: STM 109 P.2 HEAT CAPACITY (KCAL/MAIL)

#ADE) = 78.0 REFERENCE: PTP45 .0700 AT 25.0 DEGREE CENT. REFERENCE: -50.00 REFERENCE: TDMR 1094 .720+01 AT 20.0 DEGREE CENTIGRADE .980+01 AT .0 DEGREE CENTIGRADE FREEZING POINT (DEG. CENT.)= SOLUBILITY(G/100G SOLVENT)

SOLUBILITY(G/100G SOLVENT)

ZHURN. F12 KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE

REFERENCE: ETF100-41 VOL 1 REFERENCE: STUDY 35-48 WATER

DENSITY TEMPERATURE VOLUME DEG C 419.02 3456

THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .059 DIFFUSION COEF.

VISCOSITY OF VAPOR = 6.56-03 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING IT MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1844)

40.0 DEGREES ۲ 1205 END OF COMPOUND EA

PAGE NUMBER B-

Appendix B

UNCL

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR36 -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1207 AT SUMMARY OF PROPERTIES OF EA COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00123 +TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.2324 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -632.26, C= 273.2 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.5

4.102 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 4.1

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 REFERENCE: TCR36 -64.00. REFERENCE: TCR36 27.6 AT 25.0 DEG. CENT. 25.5 DEG. CENT. ¥ SURFACE FENSION (DYNES/CM) ** REFRACTIVE INDEX(ND) ** 1.3760 FACEZING POINT (DEG. CENT.)**

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME FIE

ATM. CC/MDLE 328.01 DENSITY TEMPERATURE 336. 19 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.67-03 CENTIPOISE

-40.0 DEGREES C. ¥ END OF COMPOUND EA 1207

PAGE NUMBER 8-

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR36 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: AT OF PROPERTIES OF EA 1207 COMMON NAME: SURBARY

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00123 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML)= 1.2078 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TOP 34

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 273.2 -632.26, C* THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -632. TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.5 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 2.505

OF THE DATA TEMPERATURE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: TCR36 REFERENCE: TCR38 25.0 DEG. CENT. REFERENCE: TCR36 27.6 AT 25.0 DEG 25.5 DEG. CENT. -64.00 REFERENCE SURFACE TENSION (OVNES/CM) = REFRACTIVE INDEX(ND) = 1.3760 AT FREEZING POINT (DEG. CENT.) =

WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESCURE ATM.

FOLLOWING CRITICAL PROPERTIES
DENSITY TEMPERATURE VOLUME
GM/CC DEG C CC/MOLE . 3844 ͳ

CM.5Q./SEC CALCULATED FOR VAPOR IN AIR .048 DIFFUSION COEF.

CENT I POI SE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.25-03 (THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23(1944)

-20.0 DEGREES C.

¥

1207

END OF COMPOUND EA

8 PAGE NUMBER B-

GENERAL REFERENCE: TCR36 .0 DEGREES CENTIGRADE FORMULA WEIGHT: 1207 **E** OF PROPERTIES OF COMMON NAME: SUMMARY

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING FOINT AND NOT MEANINGFUL

.00123 *TEMP.(C.) DETERMINED OVER TORR) = .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 1.1832 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 -RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 VAPOR PRESSURE(TORR) = 1.1832 THE TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 273.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -632.28, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.5 TEMPERATURE RANGE

1.644 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= DATA TEMPERATURE RANGE REFERENCE: 1CR36 OF THE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: TCR36 27.6 AT 25.0 DEG. CENT. 25.5 DEG. CENT. -64.00 REFERENCE: 7CR36 ۲ SURFACE TENSION (DYNES/CK) = REFRACTIVE INDEX(ND)== 1.3760 FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201 (1963)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE
GB/CC DEG C CC/MOLE ATM.

.3844 336.19 328.01 39.81

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .057 DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.82-03

ပ .0 DEGREES ۲ END OF COMPOUND EA. 1207

8

PAGE NUMBER B-

Appendix B

_翼 SSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: 1CR36 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1207 OF PROPERTIES OF EA COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ***

.00123 +TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR) = .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.1586 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1832 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 273.2 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09868, B= -632.26, TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.S WERE USED TO CALCULATE THE VISCOSIFY

VISCOSITY (CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

REFERENCE: TCR36 REFERENCE: TCR36 27.6 AT 25.0 DEG. CENT. 25.5 DEG. CENT. -64.00 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) *
REFRACTIVE INDEX(ND) * 1.3760
FREEZING FOINT (DEG. CENT.)*

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 328.01 ŦE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 900. DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 7.38-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

8 PAGE NUMBER B-

20.0 DEGREES C.

7

END OF COMPOUND EA. 1207

ASSIFIED

TCR38

REFERÊNCE:

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR36 25.0 DEGREES CENTIGRADE 1207 AT 25.0 DEGRE FORMULA WEIGHT: 126.1 1207 Ę 9 SUMMARY OF PROPERTIES COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ***** WARNING: SINCE

.00123 *IEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.1525 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

DETERMINED OVER THE

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -632.26, C= 273.2 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.5 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 1.052

VISCOSITY(CENTISTONES) = 1.052
SURFACE TENSION (DYNES/CM) = 27.6 AT 25.0 DEG. CENT.
REFRACTIVE INDEX(ND) = 1.3760 AT 25.5 DEG. CENT.
FREEZING POINT (DEG. CENT.) = -64.00 REFERENCE: TCR36

FOLLOWING CRITICA: PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATE PRESSURE ATM. Ϊ

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MOCIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.53-03

25.0 DEGREES

A

1207

PAGE NUMBER 8- 35

END OF COMPOUND EA

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR38 40.0 DEGREES CENTIGRADE FORMULA MEIGHT: 126.1 ۲ 1207 SUMMARY OF PROPERTIES OF EA COMMON NAME:

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING PUINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00123 +TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DEHSITY(G/ML)= 1.1340 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

DETERMINED OVER THE

273.2 THE FOLLCWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -632.26, C= Temperature range 25.0 TO 50.0 Deg. Cent. Reference: TCR36 P.5 Were used to calculate the viscosity

. 832 VISCOSITY (CENTISTOKES)=

REFERENCE: TCR36 REFERENCE: TCR36 27.6 AT 25.0 DEG. CENT. 25.5 DEG. CENT. -64.00 REFERENCE: TCR36 -64.00 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3760 AT FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure ATM. CC/MOLE 328.01 336. 19 DEGC SM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .078 DIFFUSION COEF.

THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(194.)

40.0 DEGREES C.

¥

END OF COMPOUND EA 1207

PAGE NUMBER B- 36

1<u>7</u>6

. 3844

GEHERAL REFERENCE: PTP278 -40.0 DEGREES CENTIGRADE FORMULA WEIGHT! **208** SUMMARY OF PROPERTIES COMMON NAME:

DETERMINED OVER THE 227.9 ů 7.48160, B- 1773.82. REFERENCE: PTP278 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A.

BO.O DEG. CENT. 5.0 10

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 12.5 ESTIMATED BOILING POINT(CENT.) + 157.7 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .11+03 VAPOR PRESSURE(TORR): .11-01 TEMPERATURE RANGE

.00118 +TEMP.(C.) DETERMINED OVER VOLATILITY(MG/METER CUBED)* .11+03 VOLATILITY(MILLIMOLE/ METER CUBED)* .75+00 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

1.1654 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.1182 REFERENCE: PTP278 40.0 DEG. CENT. 10.0 10 THE TEMPERATURE RANGE DENSITY (G/ML)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

IS(EATR 4491): A= -.71231, B= -86.35, C= 80.2 DETERMINED OVER THE 40.0 DEG. CENT. REFERENCE:PTP278 PURE. TECH 10% HIGHER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A-WERE USED TO CALCULATE THE VISCOSITY 20.0 10 TEMPERATURE RANGE

27.103 VISCOSITY(CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: PTP278 HIGH PURITY . 35.0 DEG. CENT. R. 33.3 DYNES/CM 28.7640 -20.0 10 WERE USED TO CALCULATE THE SURFACE TENSION. GOUATIOH: SURFACE TENSION(DYNES/CM)= DETERMINED OVER THE TEMPERATURE RANGE

DETERMINED OVER THE TEMPERATURE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** REFRACTIVE INDEX(ND)= 1.4089 WAS CALCULATED FROM THE EQUATION:

REFERENCE: J.RES NBS SEC A 1975 79A(5)635 REFERENCE: CROL-TL-63-5-555 CENT. .0 DEGREE CENTIGRADE -249.00 AT 25.0 DEGREE REFERENCE: TCIR 513 REFRACTIVE INDEX(ND) = 1.3917 - .00043*TEMPERATURE(C.) 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278 HEAT DF FORMATION OF LIQUID (MCAL/MOLE) = -249.00 AT 25.0 DEGREE . 100+03 AT -56.90 FREEZING POINT (DEG. CENT.) = SOLUBILITY(G/100G SOLVENT)

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME CC/MOLE DENSITY TEMPERATURE 뿔

ATK.

ZIMURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

384.41

.036 DIFFUSION COEF. .

PAGE NUMBER B- 37 CALC ARCSL-TR IN PROGRESS VISCOSITY OF VAPOR # 5.42-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.42-03 (DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARGSL-24.7 AT AMBIENT TEMPERATURE OXYGEN INDEX (UNITLESS)=

-40.0 DEGREES C.

¥

END OF COMPOUND. EA 1208

UNCL/ SSIFIED

GENERAL REFERENCE: PTP278 A 1208 AT -23.0 DEGREES CENTIGRADE FORMULA WEIGHT: 140.1 OF EA OF PROPERTIES COMMON NAME:

DETERMINED OVER 227.9 B* 1773.82, C* 7.48160, B= 177; REFERENCE: PTP278 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT.

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)= .09-01

12.0 ESTIMATED BOILING POINT(CENT.) = 157.7 HEAT OF VAPORIZATION(MILOCALORIES/MOLE) =

VOLATILITY(MG/METER CUBED) = .79+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .56+01 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** VOLATILITY(MILLIMOLE/ METER CUBED)* VOLATILITY (MG/METER CUBED)=

.00118 *TEMP.(C.) DETERMINED OVER 1 1.1418 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1182 RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 THE TEMPERATURE RANGE DENSITY(G/ML)=

***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE TS(EATR 4491): A= -.71231, B= -86.35, C= 80.2 DE 40.0 DEG. CENT. REFERENCE:PTP278 PURE. TECH 10% HIGHER -86.35, FOLLOWING ANTOINE CONSTANTS (EATR 4491): A-20.0 10 TEMPERATURE RANGE UNCLASSIFIED

5.259 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= **** WARNING: THE ABOVE VALUES ARE EXTRAPCLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: PTP278 HIGH PURITY .1129+TEMP.(C.) 28.7640 EQUATION: SURFACE TENSION(DYNES/CM)= 工工

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: PTP278 H WERE USED TO CALCULATE THE SURFACE TENSION 31.0 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND) = 1.4003 WAS CALCULATED FROM THE EQUATION:

REFERENCE: J.RES NBS SEC A 1975 79A(5)635 DETERMINED OVER THE TEMPERATURE KANGE 25.0 DEGREE CENT. REFERENCE: TCIR 513 .0 DEGREE CENTIGRADE REFRACTIVE INDEX(ND)= 1.3917 - .00043*TEMPERATURE(C.) 15.0 to 30.0 DEG. CENT. REFERENCE: PTP278 HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -249.00 AT 25.0 DEGREE FREEZING POINT (DEG. CENT.)= -56.90 REFERENCE: TCIR 513 FREEZING POINT (DEG. CENT.) = SOLUBILITY(G/100G SOLVENT)

. 100+03 AT

REFERENCE: CRDL-TL-63-S-555 #1SCIBLE

ZHURN. FIZ KHIM. 37. 201(1963]

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. CC/MOLE 384.41 329.12 .3645 SM/CC 표

.043 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

VISCOSITY OF VAPOR = 5.97-03 CENTIPOISE URE REFERENCE: CALC ARCSL-TR IN PROGRESS TURE REFERENCE: NB9253 P 4 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE 3.4 AT AMBIENT TEMPERATURE 24.7 AT AMBIENT TEMPERATURE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48.23(1944)
DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMP OXYGEN INDEX(UNITLESS)= 표

-20.0 DEGREES C. END OF COMPGUND EA 1208 AT

8 6 PAGE NUMBER

GENERAL REFERENCE: PTP278 .0 DEGREES CENTIGRADE 1 1208 AT FORMULA WEIGHT: 1208 SUMMARY OF PROPERTIES OF EA COMMON NAME:

DETERMINED OVER 227.9 ů 1773.82, REFERENCE: PTP278 7.48160, B= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A=

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .50+00
ESTIMATED BOILING POINT(CENT.)= 157.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.7

VOLATILITY(#G/METER CUBED)= .41+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .29+02 +**** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE +****

.00118 +TEMP.(C.) DETERMINED OVER 1.1182 WAS CALCULATED FROM THE EQUATION: DENSITY: 1.1182 -- RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 THE TEMPERATURE RANGE DENSITY (G/ML) =

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

15(EATR 4491): A= -.71231, B= -86.35, C= 80.2 DETERMINED OVER THE 40.0 DEG. CENT. REFERENCE:PTP278 PURE. TECH 10% HIGHER FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. TEMPERATURE RANGE 20.0 TO 40.0 DE WERE USED TO CALCULATE THE VISCOSITY

2.310 VISCOSITY(CENTISTOKES)=

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: PTP278 HIGH PURITY WERE USED TO CALCULATE THE SURFACE TENSION 28.8 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** .1129*TEMP.(C.) 35.0 DEG. CENT. ı 28.7640 -20.0 TO EQUATION: SURFACE TENSION(DYNES/CM)= 28.70
DETERMINED OVER THE TEMPERATURE RANGE 20.0
WERE USED TO CALCULATE THE SURFACE TENSION ፗ

REFERENCE: J.RES NBS SEC A 1975 794(5)635 DETERMINED OVER THE TEMPERATURE MANGE .00043*TEMPERATURE(C.) REFRACTIVE INDEX(ND) = 1.3917 #AS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND) # 1.3917 - .00043*TEMPERATUR 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278 HEAT DF FORMATION OF LIQUID (KCAL/MOLE) # ~249.00 AT 25.0 D

REFERENCE: CRDL-TL-63-5-555 -249.00 AT 25.0 DEGREE CENT. REFERENCE: TCIR 513 .0 DEGREE CENTIGRADE -56.90 .100+03 AT FREEZING POINT (DEG. CENT.) = SOLUBILITY(G/100G SOLVENT)

MISCIBLE

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV Density temperature volume pressure 品

ATE. CC/MOLE 384.41 DEG C 329.12 GM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .051 DIFFUSION COEF. .

EFERENCE: CALC ARCSL-TR IN PROGRESS REFERENCE: NB9283 P 4 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PRUPERTIES AND THE IFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.51-03 CENTIPOISE DIPOLE MOMENT(DEBYES) 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PRO MODIFIED SUTHERLANDS EQ., U.PHY.CHEM.48.23(1944) VISC DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE DXYGEN INDEX(UNITLESS)= 24.7 AT AMBIENT TEMPERATURE 뿔

PAGE NUMBER 8- 39

ن

.O DEGREES

¥

END OF COMPOUND EA 1208

UNCLASSIFIED

GENERAL MEFERENCE: P19278 DETERMINED OVER THE 20.0 DEGREES CENTIGRADE 227.9 ů B= 1773.82. FORMULA WEIGHT: 140.1 7.48160, 8= 177; REFERENCE: PTP278 AT **5** CONSTANTS(EATR 4491): A= SUMMARY OF PROPERTIES OF COMBON MANE: GB FOLLOWING ANTOINE THE FOLLOWING ANTI TEMPERATURE RANGE

The state of the s

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)* 21+0+ ESTIMATED BOILING POINT (CENT.)-

HEAT OF VAPORIZATION (KILOCALORIES/MOLE).

.12+03 .00118 +TEMP.(C.) DETERMINED GVER DENSITY(G/ML) = 1.0946 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 - 1.1182 -11.3

DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.71231, B= -86.35, C= 80.2 DE Frature range 20.0 to 40.0 deg. Cent. Reference:PTP278 Pure. Tech 10% Higher WERE USED TO CALCULATE THE VISCUSITY TEMPERATURE RANGE 표

1.409 VISCOSITY(CENTISTOKES)=

REFERENCE: PTP278 HIGH PURITY .1129+TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. WERE USED TO CALCULATE THE SURFACE TENSION 26.5 DYNES/CM REFRACTIVE INDEX(ND) = 1.3831 WAS CALCULATED FROM THE EQUATION: 28.7640 -DETERMINED OVER THE TEMPERATURE RANGE 20 MERE USED TO CALCULATE THE SURFACE TENSION SURFACE TENSION DYNES /CM) = EQUATION:

DETERMINED OVER THE TEMPERATURE RANGE .00043*TEMPERATURE(C.) REFRACTIVE INDEX(ND). 1.3917 - .00043+TEMPERATUR 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278

REFERENCE: J.RES NBS SEC A 1975 79A(S)635 REFERENCE: CRDL-TL-63-5-555 MISCIBLE CENT. .0 DEGREE CENTIGRADE -249.00 AT 25.0 DEGREE REFERENCE: TCIR 513 (KCAL/MOLE)= -249.00 AT .100+03 AT -56.90 HEAT OF FORMATION OF LIQUID FREEZING POINT (DEG. CENT.)= SOLUBILITY(G/100G SOLVENT)

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CAITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE UNCLASSIFIED

33.57 CC/MOLE 329, 12 DEG GM/CC . 3645

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

VISCOSITY OF VAPOR = 7.05-03 CENTIPOISE JRE REFERENCE: CALC ARCSL-TR IN PROGRESS FURE REFERENCE: N89283 P 4 VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE 24.7 AT AMBIENT TEMPERATURE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VIS DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE OXYGEN INDEX(UNITLESS) = 24.7 AT AMBIENT TEMPERATURE OF THE VISCOSITY

20.0 DEGREES 1208 AT END OF COMPOUND EA

PAGE NUMBER

REFERENCE: J.RES NBS SEC A 1975 79A(5)635

GENERAL REFERENCE: PTP278 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: 140.1 1208 OF PROPERTIES OF COMMON NAME: GB

DETERMINED OVER THE 227.9 1773.82, C= 7.48160, B= 177; REFERENCE: PTP278 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT.

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

.00118 +TEMP.(C.) DETERMINED OVER . 16+03 VAPGR PRESSURE(TORR)= .2940: ESTIMATED BOILING POINT(CENT.)= 157.7 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.3 VOLATILITY(MG/METER CUBED)= .22+05 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.0887 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1182 --THE TEMPERATURE RANGE 10.0 TO 40.0 DEG, CENT. REFERENCE: PTP278

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE:PTP278 PURE. TECH 10% HIGHER USED TO CALCULATE THE VISCOSITY

REFERENCE: PTP278 HIGH PURITY .1129*TEMP.(C.) 35.0 DEG. CENT. R 28.7640 -EQUATION: SURFACE TENSION(DYNES/CM)= 1.283 VISCOSITY (CENTISTOKES). UNCL.

DETERMINED OVER THE TEMPERATURE RANGE DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFE WERE USED TO CALCULATE THE SURFACE TENSION 25.9 DYNES/CM REFRACTIVE INDEX(ND)= 1.3809 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)= 1.3917 - .00043*TEMPERATURE(C.) DETER 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278 HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -249.00 AT 25.0 DEGREE CENT. FREEZING POINT (DEG. CENT.)= -56.90 REFERENCE: TCIR 513

REFERENCE: CRDL-11-63-5-555 .0 DEGREE CENTIGRADE .100+03 AT SOLUBILITY(G/100G SOLVENT)

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. .3645 329.12 384.41 33.57 ASSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .061 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.19-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PROGRESS REFERENCE: NB9253 P 4 24.7 AT AMBIENT TEMPERATURE OXYGEN INDEX (UNITLESS)=

25.0 DEGREES ¥ 1208 END OF COMPOUND EA

Ŧ

PAGE NUMBER BY

GENERAL REFERENCE: PTP278 40.0 DEGREES CENTIGRADE 140.1 FORMULA WEIGHT: ¥ 1208 ű <u>n</u> 8 SUMMARY OF PROPERTIES COMMON NAME:

DETERMINED OVER THE 227.9 1773.82, C=

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 7.48160, B* 177; TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT. REFERENCE: PTP278 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: .72+01 VAPOR PRESSURE(TORR) =

ESTIMATED BOILING POINT (CENT.) = 157.7 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) =

.00118 +TEMP.(C.) DETERMINED OVER .37+03 VOLATILITY(MG/METER CUBED) . .52+05 VOLATILITY(MILLIMOLE/ METER CUBED) . DENSITY(G/ML) = 1.6710 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1182 - THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -.71231, B* -86.35, C* 80.2 DE'
TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE:PTP278 PURE. TECH 10% HIGHER
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)* 1.013

REFERENCE: PTP278 HIGH PURITY **** WERE USED TO CALCULATE THE SURFACE TENSION 24.2 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .1129*TEMP.(C.) 35.0 DEG. CENT. R 28.7640 -20.0 TO EQUATION: SURFACE TENSION(DYNES/CM)= 28. DETERMINED OVER THE TEMPERATURE RANGE 20 WERE USED TO CALCULATE THE SURFACE TENSION

DETERMINED OVER THE TEMPERATURE RANGE REFRACTIVE INDEX(ND)= 1.3745 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)= 1.3917 - .00043*TEMPERATURE(C.) 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278

REFERENCE: J.RES NBS SEC A 1975 79A(5)635 REFERENCE: CRDL-11-83-5-555 (KCAL/WOLE)= -249.00 AT 25.0 DEGREE CENT. -56.90 REFERENCE: TCIR 513 .O DEGREE CENTIGRADE .100+03 AT HEAT OF FORMATION OF LIQUID FREEZING POINT (DEG. CENT.) * SOLUBILITY(G/100G SOLVENT)

ZHURN. F12 KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MDLE 뿚

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .068 DIFFUSION COEF.

384.41

329.12

VISCOSITY DF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE IFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR # 7.59-03 CENTIPDISE DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PROGRESS OXYGEN INDEX(UNITLESS) = 24.7 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P 4 MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISC DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE DXYGEN INDEX(UNITLESS)= 24.7 AT AMBIENT TEMPERATURE

40.0 DEGREES ۲ END OF COMPOUND EA 1208

Ş 1

PAGE NUMBER

GENERAL REFERENCE: TOMR1182 1 1209 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 154.1 Ā SUMMARY OF PROPERTIES OF COMMON NAME:

DETERMINED OVER THE

273.2 2536.90, Cm TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFERENCE: TOWR 1182 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)=

ESTIMATED BOILING POINT (CENT.) = 162.1 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 11.6 VOLATILITY(MG/METER CUBED) = .72+02 VOLATILITY(MILLIMOLE/ METER CUBED) = ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

RANGE ****

.46+00

.00106 *TEMP.(C.) DETERMINED OVER ı REFERENCE: TOMR 1182 1.1255 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0830 RANGE 10.0 10 35.0 DEG. CENT. REFERENCE: TOWR 1182 THE TEMPERATURE RANGE DENSITY(G/ML)=

*:*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** REFERENCE: TOWR 1182 REFERENCE: TOWR 1181 VISCOSI IY (CENTISTOKE)=

REFERENCE: TOWR 1182 25.0 DEGREES CENTIGRADE 25.0 DEGREES CENTIGRADE 25.0 DEG. CENT. 1.400 AT SURFACE TENSION (DYNES/CM) = VISCOSITY (CENTIPO (SE)=

REFERENCE: TOWR 1182 DID NOT FREEZE 24.9 AT 25.0 DEG 25.0 DEG. CENT. -70.00 REFERENCE REFRACTIVE JNDEX(ND) = 1.3817 AT FREEZING POINT (DEG. CENT.) = FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PHESSURE DENSITY TEMPERATURE VOLUME 꿅

ZHURN, FIZ KHIM. 37. 201(1963)

ATM. CC/MOLE 443.50 364.24 3475

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .032 DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.97-03

ပ -40.0 DECREES ¥ END OF COMPOUND EA 1209

6

å

NUMBER

PAGE

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TOMR1182 1 1209 AT -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 154.1 GEN OF EA SUMMARY OF PROPERTIES COMMON NAME:

DETERMINED OVER THE

273.2 ڻ 8.70810, B= 2536.90, REFERENCE: TDMR 1182 TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: THE FOLLOWING ANTUINE CONSTANTS (EATS 4491): A=

HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= ESTIMATED BOILING POINT (CENT.)= VAPOR PRESSURE (TORR) = .49-01

VOLATILITY(MG/WETER CUBED)* .48+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .31+01
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

.00106 *IEMP.(C.) DETERMINED OVER 1.0830 -REFERENCE: TOMR 1182 1.1043 WAS CALCULATED FROM THE EQUATION: DENSITY# RANGE 10.0 10 35.0 DEG. CENT. REFERENCE: 1 THE TEMPERATURE RANGE DENSITY(G/ML)=

REFERENCE: TOWR 1182 REFERENCE: TOWR 1181 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT, OF THE DATA TEMPERATURE RANGE VISCOSITY (CENTISTOKE) =

REFERENCE: TOWN 1182 REFERENCE: TOWR 1182 0 AT 25.0 DEGREES CENTIGRADE 0 AT 25.0 DEGREES CENTIGRADE 24.9 AT 25.0 DEG. CENT. 25.0 DEG. CENT. 1.400 AT 1.480 AT SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3817 AT VISCOSITY (CENTIPOISE) *

REFERENCE: TOWR 1182 DID NOT FREEZE -70.UO FREEZING POINT (DEG. CENT.)*

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR CC/MOLE 443.50 .039 DIFFUSION COEF. = 3475

ON/CC

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.48-03 CENTIPOISE

-20.0 DEGREES C. ¥ 1209 END OF COMPOUND EA

44

PAGE NUMBER B-

ZHURN, F12 KHIM, 37, 201(1963)

GENERAL REFERENCE: TOWR1182 . O DECREES CENTIGRADE 154.1 FORMULA WEIGHT: ۲ 1209 EA SUMMARY OF PROPERTIES OF COMMON NAME: GE

273.2 DETERMINED OVER THE ů 8.70810, B= 2536.90, REFERENCE: TOWR 1182 ANTOINE CONSTANTS(EATR 4491): A.

TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: . 26+00 VAPOR PRESSURE(TORR)=

11.6 ESTIMATED BUILING PUINT(CENT.) = 162.1 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .24+04

RANGE **** VOLATILITY(MG/METER CUBED) = .24+04 VOLATILITY(MILLIMOLE/ METER CUBED) = ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE .00105 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0830 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0830 THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

ADE REFERENCE: TOMR 1182
REFERENCE: TOMR 1181
REFERENCE: TOMR 1182
REFERENCE: TOMR 1182 25.0 DEGREES CENTIGRADE 25.0 DEGREES CENTIGRADE AT 25.0 DEG. CENT. 24.9 AT 25.0 DEG 25.0 DEG. CENT. -70.00 REFERENCE 1.400 AT 1.480 AT SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3817 AT VISCOSI IY (CENTISTOKE) = VISCOSITY (CENTIPOISE) =

REFERENCE: TOWR 1182 DID NOT FREEZE REEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/MOLE DENSITY TEMPERATURE VOLUME 443.50 364.24 .3475 GW/CC FIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .046 DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.99-03 CENTIPDISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EG., J.PHY.CHEM,48,23(1944)

ပ .o DEGREES ۲ 1209 END OF COMPOUND EA

PAGE NUMBER B-

GENERAL REFERENCE: TDMR1182 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1209 SUMMARY OF PROPERTIES OF EA

273.2 DETERMINED OVER THE 8.70810, B= 2536.90, C= REFERENCE: TDMR 1182 THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. 50.0 DEG. CENT. 30.0 TO FEMPERATURE RANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)=

VAPOR PRESSURE(TORR)= .11+01
ESTIMATED BUILING POINT(CENT.)* 162.1
HEAT OF VAPORIZATION(KILOCALDRIES/MOLE)* 11.6
VOLATILITY(MG/METER CUBED)* .96+04 VOLATILITY(MILLIMOLE/ METER CUBED)* .62+02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

.00106 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML)= 1.0517 THE TEMPERATURE RANGE

1.0517 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0830 - RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182

RADE REFERENCE: TOMR 1182
RADE REFERENCE: TOMR 1181
REFERENCE: TOMR 1182 25.0 DEGREES CENTIGRADE 25.0 DEG. CENT. 24.9 AT 1.400 AT VISCOSITY (CENTIPOISE)= VISCOSITY (CENTISTOKE) =

REFERENCE: TOMR 1182 DID NOT FREEZE 25.0 DEG. CENT. -70.00 1.3817 AT FREEZING POINT (DEG. CENT.)* SURFACE TENSION (DYNES/CM) REFRACTIVE INDEX(ND)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CS DEG C CC/MOLE ATM.

ZHURN. FIZ KHIM. 37. 201(1963)

443.50 364.24 3475

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .054 DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

20.0 DEGREES C. ۲ 1209 END OF COMPOUND EA

PAGE NUMBER 8-

Appendix B

GENERAL REFERENCE: TOMA1182 25.0 DEGREES CENTIGRADE 154.1 FORMULA MEIGHT: SUMMARY OF PROPERTIES OF COMMON NAME: GE COMMON NAME:

DETERMINED OVER THE 273.2 8.70810, 8= 2536.90, C= REFERENCE: TOMR 1182 TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: FOLLOWING ANTOINE CONSTANTS (EATR 4491): A*

ESTIMATED BOILING POINT(CENT.)* 162.1 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* VAPOR PRESSURE(TORR)=

VOLATILITY(MG/METER CUBED) - .13+05 YOLATILITY(MILLIMOLE/ METER CUBED) - .85+02 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

.00106 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0564 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0830 -- THE TEMPERATURE RANGE 10.0 70 35.0 DEG. CENT. REFERENCE: TOMR 1182

REFERENCE: TOWR 1482 REFERENCE: TOMR 1182 0 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDM 24.9 AT 25.0 DEG. CENT. REFERENCE: TDMF 25.0 DEG. CENT. REFERENCE: TDMF 25.0 DEG. CENT. REFERENCE: TDMR 1182 -70.00 REFERENCE: TDMR 1182 DID NOT FREEZE 1.400 AT SURFACE TENSION (DYNES/CM) VISCOSITY (CENTIPOISE) # VISCOSI FY (CENTISTOKE) =

REFRACTIVE INDEX(ND) = 1.3817 AT FREEZING POINT (DEG. CENT.) =

ZHURN. FIZ KHIM. 37. 201 (1963) POLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE YOLUME PRESSURE

GW/CC DEG C CC/MOLE ATM.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 30.80 .055 DIFFUSION COEF. 3475

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.61-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) PAGE NUMBER B-

25.0 DEGREES C.

7

1209

END OF COMPOUND EA

Appendix B

SSIFIED

GENERAL REFERENCE: TOMR1182 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 7 1209 SUMMARY OF PROPERTIES OF EA COMMON NAME:

DETERMINED OVER THE

273.2 8.70810, B= 2536.90, C= REFERENCE: TOWR 1182 THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): Am 50.0 DEG. CENT.

TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFER Were used to calculate the following four properties: .41+01 VAPOR PRESSURE(TORR) =

ATION(KILOCALORIES/MOLE) # 11.6 ETER CUBED) # .32+05 VOLATILITY(MILLIMOLE/ METER CUBED) # 1.0405 WAS CALCULATED FROM THE EQUATION: DENSITY # 1.0830 # RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182 ESTIMATED BOILING POINT(CENT.) = 162.1 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .32+05 DENSITY (G/ML) =

.21+03

.00106 +TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: TOWR 1182 REFERENCE: TOWR 1181 REFERENCE: TOWR 1182 25.0 DEGREES CENTIGRADE 25.0 DEGREES CENTIGRADE AT 25.0 DEG. CENT. 1.400 AT 1.480 AT SURFACE TENSION (DYNES/CM) . VISCUSITY (CENTISTOKE) = VISCOSITY (CENTIPOISE) =

REFERENCE: TOWR 1182 REFERENCE: TOWR 1182 DID NOT FREEZE 24.9 AT 25.0 DEC 25.0 DEG. CENT. -70.00 REFERENCE REFRACTIVE INDEX(ND)= 1.3817 AT FREEZING POINT (DEG. CENT.)= ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE THE

ATM. CC/NOLE 364.24 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .062 DIFFUSION COEF.

VISCOSITY OF VAPOR . 6.99-03 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

40.0 DEGREES C. 7 END OF COMPOUND EA 1209

PAGE NUMBER 8-

GENERAL REFERENCE! TOWRI292 A 1210 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 182.2 5 SUMMARY OF PROPERTIES OF COMMON NAME: GD

DETERMINED OVER THE 216.9 ပံ 7.47060, B= 1903.10, REFERENCE: EC-TR-76058 TEMPERATURE RANGE -23.0 TO 190.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: FOLLOWING ANTOINE CONSTANTS(EATR 4491): As

HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.1 VOLATILITY(MG/METER CUBED) = .64+01 VOLATILITY(MILLIMOLE/ METER CUBED) = .35-01 *+*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE +++** VAPOR PRESSURE(TORR)= .51~03 ESTIMATED BUILING POINT(CENT.)= 197.8 HEAT OF VAPORIZATION(KILOCALDRIES/MOLE)= VOLATILITY(MG/METER CUBED)= .64+01

.00093 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0828 MAS CALCULATED FROM THE EQUATION: DENSITY = 1.0456 - THE TEMPERATURE RANGE 10.0 10 50.0 DEG. CENT. REFERENCE: TDMR 1292

RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 222.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.36154, B= -704.49, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TOWN 1292

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 32.374

***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: TOMR1292 REFERENCE: TOWR1292 NEFERENCE: NB-6695, 9672 PURE REFERENCE: NB7265 97.6% PURE 20.0 DEGREE CENTIGRADE RE 26.5 DEG. CENT. REFRACTIVE INDEX(ND) = 1.4050 AT 25.9 DEG. CENT. FLASH POINT, OPEN CUP (CENTIGRADE) = 121.0 REF SOLUBILITY OF TOTAL CENT.) = -42.00 BEFFERENCE SURFACE TENSION (DYNES/CM) =

REFERENCE: EATR4210 WATER .210+01 AT

SOLUBILITY (G/100G SOLVENT)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/MOLE DENSITY TEMPERATURE VOLUME 416.28 .3288 **၁**၁/**₹**5 뿚

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .027 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.42-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

-40.0 DEGREES C. END OF COMPOUND EA 1210 AT

GENERAL REFERENCE: TOMR1292 -20.9 DEGREES CENTIGRADE FORMULA WEIGHT: 1210 SUMMARY OF PROPERTIES OF EA COMMON NAME:

216.9 DETERMINED OVER THE ů WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) . .64-02

.00093 +TEMP.(C.) DETERMINED OVER :TER CUBED)= .73+02 VOLATILITY(MILLIMOLE/ METER CUBED)= 1.0642 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0456 -REFERENCE: TOWR 1292 50.0 DEG. CENT. ESTIMATED BOILING POINT(CENT.)= 197.8 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 10.0 10 VOLATILITY (MG/METER CUBED)= THE TEMPERATURE RANGE DENSITY (G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 222.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -2.36154, 8s -704.49, Cs TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TOWR 1292 WERE USED TO CALCULATE THE VISCOSITY

13.390 VISCOSITY (CENTISTOKES)* ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TDMR1292 REFERENCE: TOMR1292 26.5 DEG. CENT. REFRACTIVE INDEX(ND)= 1.4050 AT 25.0 DEG. CENT. FLASH POINT, OPEN CUP (CENTIGRADE)= 121.0 REFREEZING POINT (DEG. CENT.)= -42.00 REFERENCI 24.5 AT SURFACE TENSION (DYNES/CM) .

REFERENCE: EATR4210 WATER REFERENCE: NB-6695, 96% PURE REFERENCE: NB7265 97.6% PURE 20.0 DEGREE CENTIGRADE .210+01 AT FREEZING POINT (DEG. CENT.)= SOLUBILITY(G/100G SOLVENT)

ZHURN. FIZ KHIM. 37. 201(1961) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM.

.3288 \SSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF.

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FILED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.87-03 CENTIPOISE DIPOLE MOMENT (DEBYES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISC DIPOLE MOMENT(DEBYES)= 3.6 AT AMBIENT TEMPERATURE 뿚

-20.0 DEGREES C. END OF COMPGUND EA 1210 AT

78

GENERAL REFERENCE: TOWN1292 DETERMINED OVER THE .29+01 .0 DEGREES CENTIGRADE 216.9 VAPUN FRESSULLING POINT(CENT.) = 197.8

ESTIMATED BOILING POINT(CENT.) = 197.8

HEAT OF VAPONIZATION(KILOCALORIES/MOLE) = 13.8

VOIATILITY(MG/METET CUBED) = .53403 VOLATILITY(MILLIMOLE/ METER CUBED) 7.47060, B= 1903.10, REFERENCE: EC-TR-76058 182.2 FORMULA WEIGHT: 7.47060. 1210 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: SUMMARY OF PROPERTIES OF EA THE FOLLOWING ANTDINE CONSTANTS (EATR 4491): A= TEMPERATURE RANGE -23.0 TO 190.0 DEG. CENT.

.00092 +TEMP.(C.) DETERMINED OVER RANGE **** OF THE DATA TEMPERATURE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 222.0 -704.49, C= IS(EATR 4491): As -2.38154, Bs -704, 50.0 DEG. CENT. REFERENCE: TDMR 1292 FOLLOWING ANTOINE CONSTANTS(EATR 4491)! A= 6.493 TEMPERATURE RANGE 10.0 TO 50.0 DF WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)* THE FOLLOWING ANTOIN TEMPERATURE RANGE

WERE USED TO CALCULA VISCOSITY (CENTIS

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

26.5 DEG. CENT. REFERENCE: TOMR1292
.0 REFERENCE: NB-6695, 96% PURE
REFERENCE: NB7265 97.6% PURE
20.0 DEGREE CENTIGRADE REFERENCE: 24.5 AT 26.5 DEC 25.0 DEG. CENT. REFRACTIVE INDEX(ND)= 1.4050 AT 25.0 DEG. FLASH POINT, OPEN CUP (CENTIGRADE)= 121.0 -42.00 FREEZING POINT (DEG. CENT.)+ SURFACE TENSION (DYNES/CM) =

REFERENCE: EATR4210 WATER .210+01 AT SOLUBILITY(G/100G SOLVENT)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE VOLUME CC/MOLE DENSITY TEMPERATURE Ŧ

ZHURN. F1Z KHIM. 37. 201 (1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF. . THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.33-03 CENTIPDISE DIPOLE MOMENT(DEBYES)= 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

¥ 1210 END OF COMPOUND EA

PAGE NUMBER B-

GENERAL MEFERENCE: TOMBISOS SUMMARY OF PROPERTIES OF EA 1210 AT 20.0 DEGREES CENTIGRADE Common Name: GD Formula Weight: 192.2

216.9 DETERMINED OVER THE ឺ 7.47060, B. 1903.10, REFERENCE: EC-TR-76058 HERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: THE FOLLGWING ANTOINE CONSTANTS(EATR 4491): As TEMPERATURE RANGE -23.0 TO 190.0 DEG. CENT.

.15402 .00092 *TEMP.(C.) DETENDINED OVER ESTIMATED BUILING POINT (CENT.) = 197.8
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = 13.3
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = 13.3
VOLATILITY (MG/KETER CUBED) = .27+04 VOLATILITY (MILLIMOLE/ METER CUBED) = DENSITY (G/ML) = 1.0270 MAS CALCULATED FROM THE EQUATION: DENSITY = 1.0456 -THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TOWN 1292

DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.36154, B= -704.49, C= 222.0 TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TOWN 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 3.549

REFERENCE: TONR1292 REFERENCE: TOMR1292 26.5 DEG. CENT. SURFACE TEMSION (DYNES/CM) = 24.5 AT 26.5 DEG REFRACTIVE INDEX(ND) = 1.4050 AT 25.0 DEG. CENT. FLASH POINT, OPEN CUP (CENTIGRADE) = 121.0 RF FREEZING MOINT (DEG. CENT.) = -42.00 REFERENCE SOLUBILITY(G/100G SOLVENT) .210+01 AT 20.

REFERENCE: MB-6695, 96% PURE REFERENCE: MB7265 97.6% PURE 20.0 DEGREE CENTIGRADE RE

REFERENCE! EATR4210 WATER

ZHURN. F12 KH18. 37. 201(1962) MERE ESTIMATED USING THE METHOD OF FILIPPOY. FOLLOWING CRITICAL PROPERTIES DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/NOLE 품

ATM. CC/NOLE 416.28 GM/CC . 3288 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .045 DIFFUSION COEF. .

REFERENCE: NER-CALC ARCSL-TR IN PROGRESS THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.78-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 3.6 AT AMBIENT TEMPERATURE REFERENCE: MMR-CALC ARCSL-TR IN PROF

20.0 DEGREES AT 1210 END OF COMPOUND EA

3

PAGE MUMBER

Appandix B

UNCLASSIFIED

80

GENERAL REFERENCE: TOMA1292 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1210 SUMMARY OF PROPERTIES OF EACOMMON NAME: GD

The state of the s

The second second

DETERMINED OVER THE 216.9 ပီ

TEMPERATURE PANGE -23.0 TO 190.0 DEG. CENT. REFERENCE: EC-TR-76058 WERE USED TO CALCULATE TOLLOWING FOUR PROPERTIES: VAPOR PRESSURE (TORN) = .40400 ESTIMATED BOILLING POINT(CENT.) = 197.8

.00093 #TEMP.(C.) DETERMINED DVER .22+02 HEAT OF VAPORIZATION(KILGCALORIES/MOLE) = 13.2 HEAT OF VAPORIZATION(KILGCALORIES/MOLE) = .35+04 VOLATILITY(MILLIMGLE/ METEM CUBED) = VOLATILITY(MILLIMGLE/ METEM CUBED) = 0.0223 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0456 - 1.0456 THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292

DETERMINED OVER THE 222.0

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.36154, B= -704.49, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TDMR 1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOMES)= 3.098

SURFACE TENSION (DYNES/CM) = 24.5 AT 26.5 DEG. CENT. REFEI

24.5 AT 26.5 DES. CENT. REFERENCE: TOMR1292 25.0 DEG. CENT. REFERENCE: TOMR1292 0E) = 121.0 REFERENCE: NB-6695. 96% PURE -42.00 REFERENCE: NB7265 97.6% PURE 210+01 AT 20.0 DEGREE CENTIGNADE REFERENCE: SURFACE TENSION (DYNES/CM) = 24.5 AT 26.5 DET REFRACTIVE INDEX(ND)= 1.4350 AT 25.0 DEG. CENT. FLASH POINT, OPEN CUP (CENTIGRADE)= 121.0 RE

.210+C1 AT FREEZING POINT (DEG. CENT.)* SOLUBILI.Y(G/100G SOLVENT)

REFZRENCE: EATRASTO WATER

ZHURU. FIZ KHIM. 37. 201(1963)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE YOLUME PRESSURE GK/CC DEG C CC/MOLE ATM. 554.06 SSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR -047 DIFFUSION COEF. 3288

THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.90-03 CENTIPOISE DIPOLE MOMENTERNORESS AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

ပ 25.0 DEGREES ¥ END OF COMPOUND EA 1210

3

PAGE NUMBER B-

ZHURN. FIZ KHIM. 37. 201 (1983)

GENERAL REFERENCE: TOMR1292 40.0 DEGREES CENTIGRADE 1 1216 AT 40. FORMULA WEIGHT: 1216 SUMMARY OF PROPERTIES OF EA

The state of the s

The Name of Street,

DETERMINED OVER THE 216.9 ů 7.47060, B= 1903.10, REFERENCE: EC-TR-76058 TEMPERATURE RANGE -23.0 TO 190.0 DEG. CENT. REFER! Were used to calculate the following four properties: THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A.

VAPOR PRESSURE(TORR) =

.00093 +TEMP.(C.) DETERMINED OVER ESTIMATED BOILING POINT(CENT.) = 197.8
HEAT OF VAPORIZATION(KILDCALORIES/MOLE) = 12.9
VOLATILITY(MG/METER CUBED) = .11+05 VJLATILITY(MILLIMOLE/ METER CUBED) =
DENSITY(G/ML) = 1.0084 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0456 THE TEMPERATURE RANGE 10.0 TD 50.0 DEG. CENT. REFERENCE: TDMR 1292

DETERMINED OVER THE 222.0 -704.49, C= 5(EATR 4491): A= -2.36154, B= -704 50.0 DEG. CENT. REFERENCE:TDMR 1292 FOLLOWING ANTOINE CONSTANTS(EATR 4491): Am .

2.127 MERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 2.1

REFERENCE: TOWR1292 REFERENCE: TDMR1292 NB-6695, 96% PURE 26.5 DEG. CENT. SURFACE TENSION (DYNES/CM) = 24.5 AT 26.5 DEG REFRACTIVE INDEX(ND) = 1.4050 AT 25.0 DEG. CENT. FLASH POINT, OPEN CUP (CENTIGRADE) = 121.0 REF FREEZING POINT (DEG. CENT.) = -42.00 REFERENCE SOLUBILITY(G/100G SOLVENT) = .210+01 AT 20.

REFERENCE:

REFERENCE: EATR4210 WATER REFERENCE: NB7265 97.6% PURE 20.0 DEGREE CENTIGRADE

FOLLOWING CKITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 뿔

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .052 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.24-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

40.0 DEGREES C. ¥ 1210 END OF COMPOUND EA

7

PAGE NUMBER B-

GENERAL REFERENCE: TOWR1292 1211 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: ¥ SUMMARY OF PROPERTIES OF COMMON NAME:

DETERMINED OVER THE 273.2 3069.00, C= TEMPERATURE ANTOINE CONSTANTS(EATR 4491): A= 9.78980, B= 3069.0)
TEMPERATURE RANGE 25.0 TO 49.9 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .43-03

ESTIMATED BOILING POINT(CENT.) = 171.0 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) =

RANGE **** . 29-01 VOLATILITY(MG/METER CUBED)= .53+01 VOLATILITY(MILLIMOLE/ METER CUBED)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPGLATED OUT OF THE DATA TEMPERATURE VOLATILITY(MG/METER CUBED)=

.00098 *IEMP.(C.) DETERMINED OVER 1.0366 -REFERENCE: TOMR 1292 DENSITY(G/ML)= 1.0758 WAS CALCULATED FROM THE EQUATION: DENSITY= The temperature range 10.0 to 50.0 deg. cent. Reference: To DENSITY (G/ML) =

RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 108.0 ö WICHTURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TOMR 1292 VISCOSITY (CENTICENT) THE FULLOWING ANTOINE
TEMPERATURE RANGE
TWERE USED TO CALCULAT

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

25.7 AT 25.5 DEG. CENT. REFERENCE: TDMR1292 24.0 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR SURFACE TENSION (DYMES/CM) * REFRACTIVE INDEX(ND) = 1,4030 AT FREEZING POINT (DEG. CENT.)= SSIFIED

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILLPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

ZHURN. FIZ KHIM. 37. 201 (1963)

ATM. CC/MOLE 552.09 SM/CC 3300 .027 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

VISCOSITY OF VAPOR # 4.58-03 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

ပ -40.0 DEGREES AT 1211 END OF COMPOUND EA

S

PAGE NUMBER B-

.00098 *TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: TOMR1292 DETERMINED OVER THE -20.0 DEGREES CENTIGRADE GHT: 182.2 GEN VOLATILITY(MG/METER CUBED)= .54+02 VOLATILITY(MILLIMOLE/ METER CUBED)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE 273.2 DEMSITY(G/ML) = 1.0562 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0366 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292 9.78980, B= 3069.00, C= REFERENCE: TOMR 1292 1 1211 AT -20. FORMULA WEIGHT: THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 9.78: TEMPERATURE RANGE 25.0 TO 49.9 DEG. CENT. REFERINGE SEED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: ¥ VAFOR PRESSURE(TORR)= .47-02 ESTIMATED BOILING POINT(CENT.)= 171.0 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= SUMMARY OF PROPERTIES OF COMMON NAME:

DETERMINED OVER THE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

108.0 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00851, B= -175.38, C= ERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE:TOWR 1292 ERATURE RANGE 10.0 TO 35.0 DE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 9.6 TEMPERATURE RANGE

OF THE DATA TEMPERATURE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

25.7 AT 25.5 DEG. CENT. REFERENCE: TDMR1292 24.0 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.4030 AT FREEZING POINT (DEG. CENT.)=

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/NOLE

ZHURN. FIZ KHIM. 37. 201(1963)

GIA/CC DEG C CC/MULE 7.3300 383.45 552.09 25.49

DIFFUSION COEF. # .033 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 5.05-03 CENTIPOISE

END OF COMPOUND EA 1211 AT -20.0 DECREES C.

PAGE NUMBER B-

DETERMINED OVER THE

108.0

ů

FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00851, B= -175.38, PERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE:TDMR 1292

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

THE TEMPERATURE RANGE

OF THE DATA TEMPERATURE RANGE ****

.00098 +TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: TOMR1292 DETERMINED OVER THE RANGE21+01 .0 DEGREES CENTIGRADE 182.2 GENI VOLATILITY(MG/METER CUBED)# .39+03 VOLATILITY(MILLIMOLE/ METER CUBED)# ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 273.2 1.0366 -REFERENCE: TOWR 1292 3069.00, C= 1.0366 WAS CALCULATED FROM THE EQUATION: DENSITY" RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: T 9.76960, B= 3069.00 FORMULA WEIGHT: WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 121 SUMMARY OF PROPERTIES OF EA CONSTANTS(EATR 4491): A= 5.0 TO. 49.9 DEG. CENT. ESTIMATED BOILING POINT (CENT.) = 171.3
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = VOLATILITY (MG/METER CUBED) = .39+03 COMMON NAME: 25.0 10. VAPOR PRESSURE(TORP)* BNIOING ANTOINE DENSITY(G/ML)= TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** REFERENCE: TDMR1292 4.117 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)* 4.1

REFERENCE: TOWR1292 DID NOT FREEZE -78C 72HR 25.7 AT 25.5 DEG. CENT. 24.0 DEG. CENT. -78.00 REFERENCE: TCR36 ¥ REFRACTIVE INDEX(ND)= 1.4030 FREEZING POINT (DEG. CENT.)= SURFACE TENSION (DYNES/CM) =

WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

PRESSURE FOLLOWING CRITICAL PROPERTIES
DENSITY TEMPERATURE VOLUME
GM/CC DEG C CC/MOLE
.3300 383.45 552.09 ŦE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.52-03 (THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23(1944)

.0 DEGREES C.

AT

121

END OF COMPOUND EA

PAGE NUMBER B- 57

THE FOLLOWING ANTOING TEMPERATURE RANGE

GENERAL REFERENCE: TDMR1292 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1211 SUMMARY OF PROPERTIES OF EA g COMMON NAME:

273.2 DETERMINED OVER THE ů WERE DISED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

ESTIMATED BOILING POINT(CENT.)= 171.0

HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 14.0

VOLATILITY(MG/METER CUBED)= .21+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .11+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

.00098 *TEMP.(C.) DETERMINED DVER DENSITY(G/ML) = 1.0170 MAS CALCULATED FROM THE EQUATION: DENSITY = 1.0366 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292 REFERENCE: TOMR 1292

DETERMINED OVER THE 108.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00851, B= -175.38, C= TEMPEATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE:TOMR 1292 WERE USED TO CALCULATE THE VISCOSITY

2.297 VISCOSITY (CENTISTOKES) .

25.7 AT 25.5 DEG. CENT. REFERENCE: TDMR1292 24.0 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR F SURFACE TERSION (DYNES/CM) **
REFRACTIVE INDEX(ND) ** 1.4030
FREEZING POINT (DEG. CENT.)*

ZHURN. FIZ KHIM. 37. 201 (1963) H FI

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 3300 383.45 552.09 25.49

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .046 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.98-03 CENTIPOISE VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TIMODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

20.0 DEGREES C.

¥

END OF COMPOUND EA 1211

8 PAGE NUMBER B-

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TOWR1292 DETERMINED OVER THE FORMULA WEIGHT: 182.2 GENTIGRADE 273.2 9.78980, B= 3069.00, C= REFERENCE: TOWR 1292 TEMPERATURE RANGE 25.0 TO 49.9 DEG. CENT. HETEK Were used to calculate the following four properties: CONSTANTS(EATR 4491): A= SUMMARY OF PROPERTIES OF EA COMMON NAME: GH F 49.9 DEG. CENT. VAPOR PRESSURE(TORR)= .31+00 25.0 10 FOLLOWING ANTOINE

.17+02 .00098 *TEMP.(C.) DETERM:NED OVER VOLATILITY(MG/METER CUBED)= .31+04 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.0121 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0366 THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TOMR 1292 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) **
VOLATILITY(MG/METER CUBED) **
DENSITY(C/M:)**

DETERMINED OVER THE

IS(EATR 4491): Am -1.00851, B= -175.38, Cm 108.0 35.0 DEG. CENT. REFERENCE:TDMR 1292 FULLOWING ANTOINE CONSTANTS(EATR 4491): A. TEMPERATURE RANGE 10.0 TO 35.0 DE WERE USED TO CALCULATE THE VISCOSITY (CENTISTOKES)= 2.0

25.7 AT 25.5 DEG. CENT. REFERENCE: TDMR1292 24.0 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR 2.040 ¥ REFRACTIVE INDEX(ND)= 1.4030 SURFACE TENSION (DYNES/CM) =

REEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE 'VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.

.3300 383.45 552.09 25.49 王

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .047 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.10-03 CENTIPOISE

25.0 DEGREES C.

۲

END OF COMPOUND EA 1211

PASE NUMBER

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TOWR1292 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1211 11 OF EA SUMMARY OF PROPERTIES COMMON NAME:

DETERMINED OVER THE 273.2

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

.00098 -TEMP. (C.) DETERMINED OVER .50+03

DETERMINED OVER THE 106.0 -175.38. Ca THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00851, B= -175. TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE:TDMR 1292 WERE USED 78 CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 1.500

OF THE DATA TEMPERATURE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

25.7 AT 25.5 DEG. CENT. REFERENCE: TDMR1292 24.0 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR SURFACE TENSION (DYNES/CM) **
REFRACTIVE INDEX(ND) ** 1.4030 AT FREEZING POINT (DEG. CENT.) **

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME DEMSITY TEMPERATURE 포

CC/MOLE 552.09 383.45 3300 **2**¥/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .053 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 6.45-03 CENTIPOISE

40.0 DEGREES C. ¥ 121 END OF COMPOUND EA

PAGE NUMBER 8-

.00099 +TEMP.(C.) DETERMINED DVER GENERAL REFERENCE: EATR4210 THEREFORE THE LIQUID PROPERTIES ARE DETERMINED OVER THE VOLATILITY(MG/METER CUBED)* ,12+00 VOLATILITY(MILLIMOLE/ METER CUBED)* .69-03 6.56240, B= 1507.30, C= 170.4 DETER Reference: COMB EQU.PTP 341 + NB8343P35 -40.0 DEGREES CENTIGRADE 170.4 1.1918 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1524 -- RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292 1507.30, C= COMMON NAME: GF FORMULA WEIGHT: 180.2
***** MARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT.
VALID ONLY FOR SUPECDOLED LIQUID AND NOT THE SOLID ***** 1212 TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERENCE USED TO CALCULATE FOLLOWING FOUR PROPERTIES: 22.0 SUMMARY OF PROPERTIES, OF EA COMMON NAME: GF ! FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. VAPOR PRESSURE(TORR)= .10-04
ESTIMATED BOILING POINT(CENT.)= 239.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)=
VOLATILITY(MG/METER CUBED)= .12+00 DENSITY(G/ML) *

DETERMINED OVER THE RANGE **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

THE TEMPERATURE RANGE

86.7 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79115, B= -164.65,

TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292

TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 541.044

VISCOSITY(CENTISTOKES) = 541.044

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA 1

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA 1

SUBFACE TENSION (DYNES/CM) = 32.3 AT 25.5 DEG. CENT. REFERENCE: E100-41 VOL 1, BREFRACTIVE INDEX(ND) = 1.4590 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND) = 1.4590 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND) = 1.4590 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND) = 1.4438 - .00038*TEMPERATURE(C.)

FLASH POINT (DEG. CENT.) = 94.0 REFERENCE: CELT.

FREEZING POINT (DEG. CENT.) = -12.000 REFERENCE: E1 100-41 VI

FREEZING POINT (DEG. CENT.) = -12.000 REFERENCE: E -. 79115, B= -164.65,

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

SURFACE TENSION (DYNES/CM) = 32.3 AT 25.5 DEG. CENT. REFERENCE: TDMR1292
MELTING POINT (DEG. CENT.) = -12.0 REFERENCE: E100-41 VOL 1 METASTABLE
REFRACTIVE INDEX(ND) = 1.4590 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.4439 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
REFRACTIVE INDEX(ND) = 1.4439 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 30.0 DEG. CENT. REFERENCE: CRITIGA

DE) = 94.0 REFERENCE: Calculated -30.00 REFERENCE: ETF 100-41 VOL 1 <-30 DEG C /MOLE) = -12.000 REFERENCE: ETF 100-41 VOL 1 510+01 AT 0.0 DEGREE CENTIGRADE REFEREN 370+01 AT 20.0 DEGREE CENTIGRADE REFEREN :510+01 AT .370+01 AT FREEZING POINT (DEC. CENT.) = -30.00 MELTING POINT DEPRESSION(DEG. C./MOLE) = SOLUBILITY(G/100G SOLVENT) SOLUBILITY(G/100G SOLVENT)

70F.

100-41

REFERENCE: WATER ETF REFERENCE: WATER ETF

ZHURN. FIZ KHIM. 37. 201 (1963) PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. E VOLUME PRESSURE ATM. CC/MOLE 500.87 DENSITY TEMPERATURE FOLLOWING CRITICAL 표

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .029 DIFFUSION COEF. .

30.44

CENT 1POISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.59-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

-40.0 DECREES C.

۲

1212

END OF COMPOUND EA

5

PAGE NUMBER 8-

GENERAL REFERENCE: EATR4210 THEREFORE THE LIQUID PROPERTIES ARE AT -20.6 DEGREES CENTIGRADE 180.2 FORMULA WEIGHT: 1212 SUMINARY OF PROPERTIES OF EA COMMON NAME: GF 1 COMMON NAME:

**** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT.

6.56240, 8= 1507.30, C= 170.4 DETERMINED DVER THE REFERENCE: COMB EQU.PTP 341 + NBB343P36 THE FOLLOWING ANTOINE CONSTANTS(EAFR 4491): A= 6.56;
TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERIWERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

. 35-03 VAPOR PRESSURE(TORR)=

RANGE **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE VOLATILITY(MILLIMOLE/ METER CUBED)= HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MC/METER CUBED) = .39+01

.00099 +TEMP.(C.) DETERMINED OVER 1.1524 -REFERENCE: TOMR 1292 DE "TTY(G/ML) = 1.1721 WAS CALCULATED FROM THE EQUATION: DENŠITY* THE TEMPERATURE RANGE 10.0 10 50.0 DEG. CENT. REFERENCE: T

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 86.7 FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79115, B= -164.65, C= DEGATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TDMH 1292 THE FULLOWING ANTOINE CONSTANTS (EATRTEMPERATURE RANGE 10.0 TO 50.0 DE
WERE USED TO CALCULATE THE VISCOSITY
VISCUSITY (CENTISTOKES) = 47.5

**** WARNING: THE ABOVE VALUES A

47.502

*:*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

MELTING POINT (DEG. CENT.) = 32.3 AT 25.5 DEG. CENT. REFERENCE: TOMR1292
REFRACTIVE INDEX(ND) = 1.4514 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.4514 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.4438 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE 15.0 TO 30.0 DEG. CENT. REFERENCE: CRLR164 FREEZING POINT, '(CENTIGNADE) = 94.0 REFERENCE: CRLCULATED

REFERENCE: WATER ETF 100-41 VOL 1 REFERENCE: WATER ETF 100-41 VOL. 1 VOL 1 AEFERENCE: ETF 100-41 VDL 1 <-30 -12.000 REFERENCE: ETF 100-41 T .0 DEGREE CENTIGRADE R.T T 20.0 DEGREE CENTIGRADE R.T .510+01 AT .370+01 AT MELTING POINT DEPRESSION(DEG. C./MOLE)= SOLUBILITY(G/100G SOLVENT) .510+01 A1

ZHURN. FIZ KHIM. 37. 201 (1963) FALLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY CEMPERATURE VOLUME PRESSURE 3H1

ATM. CC/MOLE 500.87 438.22 CM/CC 3597

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF. .

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944) VISCOSITY OF VAPOR = 5.07-03 (

ပ -20.0 DEGREES ۲ END OF COMPOUND EA 1212

62

PAGE NUMBER B-

SSIFIED

RANGE

GENERAL REFERENCE: EATR4210 .0 DEGREES CENTIGRADE FORMULA WEIGHT: 1212 AT 2 SUMMARY OF PROPERTIES OF 9 COMMON NAME:

6.56240, B= 1507.30, C* 170.4 DETERMINED OVER THE REFERENCE: COMB EQU.PTP 341 + NB8343P36 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A=

TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERI WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 239.0 ESTIMATED BOILING POINT (CENT.) = . 52-02 VAPOR PRESSURE(TORR)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** .31+00 VOLATILITY(MILLIMOLE/ METER CUBED)* 17.7 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = .55+02 VOLATILITY (MG/WETER CUBED) =

.00099 +TEMP.(C.) DETERMINED OVER 1.1524 -REFERENCE: TOMR 1292 1.1524 MAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 10.0 10 THE TEMPERATURE RANGE DENSITY (G/ML) =

**** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE DETERMINED OVER THE 86.7 -164.65, C= TS(EATR 4491): A= -.79115, B= -164. 50.0 DEG. CENT. REFERENCE:TOWR 1292 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= TEMPERATURE RANGE 10.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY

12.810 VISCOSITY(CENTISTOKES)= ***** WARNING; THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TDMR1292 MELTING POINT (DEG. CENT.) = -12.0 REFERENCE: E100-41 VOL 1 NETASTABLE REFRACTIVE INDEX(ND)= 1.4438 WAS CALCULATED FROM THE EQUATION: 25.5 DEG. CENT. 32.3 AT -12.0 R SURFACE TENSION (DYNES/CM) #

(ND) = 1.4438 - .00038+TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE 30.0 DEG. CENT. REFERENCE: CRLR164 REFERENCE: Calculated

REFERENCE: ETF 100-41 VOL 1 <-30 DEG

-12.000 REFERENCE: ETF 100-41 VOL 94.0 REFRACTIVE INDEX(ND) = 1.4438 --30.00 (CENTIGRADE) ≈ 15.0 TO

.0 DEGREE CENTIGRADE 20.0 .510+01 AT C./MOLE)= MELTING POINT DEPRESSION DEG. FREEZING POINT (DEG. CENT.)* SOLUBILITY(G/100G SOLVENT) SOLUBILITY(G/100G SOLVENT) FLASH POINT,

ZHURN. FIZ KHIM. FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. 표

37. 201 (1963)

ETF 100-41 VOL 1 ETF 100-41 VOL.

REFERENCE: WATER REFERENCE: WATER

30.44 500.87 438.22 3597

CC/NOLE

CIA/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .042 DIFFUSION COEF.

CENTIPOISE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 5.55-03 " MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23(1944) THE VISCOSITY OF THE

B

6

PAGE NUMBER

ပ

.0 DEGREES

7

1212

END OF COMPOUND EA

.00099 .TEMP. (C.) DETENBINED OVER GENFRAL REFERENCE: EATR4210 170.4 DETERMINED OVER THE .24+01 6.56240, 8= 1507.30, C= 170.4 DF REFERENCE: COMB EQU.PTP 341 + NB634. 20. D DEGREES CENTIGRADE DENSITY(G/ML)= 1.1327 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1524 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. FORMULA MEIGHT: 1212 TT TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFER. WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: SUMMARY OF FROPERTIES OF EA FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. ESTIMATED BOILING POINT (CENT.) = 239.0 . 44-01 VAPOR PRESSURE(TORR)=

DETERMINED OVER THE 2 TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) * 5.645

-12.000 MELTING POINT DEPRESSION(DEG. C./MOLE) = SOLUBILITY(G/100G SOLVENT) .510+01 A SOLUBILITY(G/100G SOLVENT) .370+01 A

REPERENCE: ETF 100-41 .0 DEGNEE CENTIGRADE 20.0 DEGNEE CENTIGNADE .510+01 AT FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE ATM.

出

2MURE: F12 KHIB: 37. 201(1963)

reference: water ett 100-41 vol. 1 Reference: water ett 100-41 vol. 1

200

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

500.87

VISCOSITY OF VAPOR - 6.03-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE S ESTIMATED USING THE THE VISCOSITY OF THE VAPOR ...S ESTIMATED USING TH MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

20.0 DEGREES C. ¥ 12.2 END OF COMPOUND EA

PAGE NUMBER 8- 64

Appendix B

GENERAL REFERENCE: EATR4210 25.0 DEGREES CENTIGRADE 180.2 FORMULA WEIGHT: 7 1212 OF EA SUMMARY OF PROPERTIES COMMON NAME:

6.56240, 8= 1507.30, C= 170.4 DETERMINED OVER THE REFERENCE: COMB EQU.PTP 341 + NB8343P36 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 4E CONSTANTS(EATR 4491): As 14.0 TO 168.0 DEG. CENT. . 70-01 VAPOR PRESSURE(TORR)= THE FOLLOWING ANTOINE TEMPERATURE RANGE

.00059 *TEMP.(C.) DETERMINED OVER .38+01 VOLATILITY(MG/METER CUBED)= .68+03 VQLATILITY(MILLIMOLE/ METER CUBED)= VOLATILITY(MG/METER CUBED)= .68+03 VQLATILITY(MILLIMOLE/ METER CUBED)= 1.1278 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1524 - 1.1278 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1524 - 1.1278 WAS CALCULATED FROM THE TEMPERATURE RANGE 10.0 TD 50.0 DEG. CENT. REFERENCE: TOWR 1292 16.0 ESTIMATED BOILING POINT (CENT.) = 239.0 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) =

86.7

DETERMINED OVER THE

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -. 79115, B. -164.65, C. TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TOWR 1292 TEMPERATURE ANTOINE CONSTANTS (EATR 44

TEMPERATURE ANGE 10.0 TO 50.0 DEG.

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES)=

SURFACE TENT

4.816

RELTING POINT (DEG. CENT.) = -12.0 REFERENCE: E100-41 VOL 1, METASTABLE
REFRACTIVE INDEX(ND)= 1.4343 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.4438 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 30.0 DEG. CENT. REFERENCE: CRLR164
15.0 TO 30.0 DEG. CENT. REFERENCE: CALCALATED. REFERENCE: TOMR1292 25.5 DEG. CENT. 32.3 AT -12.0 R

REFERENCE: ETF 100-41 VOL 1 <-30 DEG C (CENTIGRADE) = 94 NI.) = -30.00

REFERENCE: ETF 100-41 VOL 1 20.0 DEGREE CENTIGRADE -12.000 .510+01 AT MELTING POINT DEPRESSION (DEG. C./MOLE)* FREEZING POINT (DEG. CENT.)= SOLUBILITY(G/100G SOLVENT) SOLUBILITY(G/100G SOLVENT)

REFERENCE: WATER ETF 100-41 REFERENCE: WATER ETF 100-41

ZHJRN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE 30.44 DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 500.87 THE

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.15-03 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) DIFFUSION COEF. .

AT 1212 END OF COMPOUND EA

25.0 DEGREES C.

ß

PAGE NUMBER 8-

93

GENERAL REFERENCE: EATR4210 TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERENCE: COMB EQU.PTP 341 + NBB343P36

VAPOR DESCRIPTIONS

VA 40.0 DEGREES CENTIGRADE 180.2 12:2 AT 40. FORMULA WEIGHT: ESTIMATED BOTLING POINT(CENT.)= 239.0 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILLITY(MG/METER CUBED)= .23+04 SUMMARY OF PROPERTIES OF COMMON NAME: GF VAPOR PRESSURE(TORR)=

Exercise !

Most of the second

Carlot State of

A walker

1

.00099 *TEMP. (C.) DETERMINED DVER .13+02 VOLATILITY(MG/METER CUBED)= .23+04 VOLATILITY(MILLIMDLE/ METER CUBED)= DENSITY(G/ML)= 1.1130 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1524 -REFERENCE: TOMR 1292 50.0 DEG. CENT. 10.0 10 THE TEMPERATURE RANGE

DETERMINED OVER THE 86.7 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -.79115, B= -164.65, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TDMR 1292 WERE USED TO CALCULATE THE VISCOSITY 3.222 VISCOSITY(CENTISTOKES)* SURFACE TENSION (DYNES/CM) = 32.3 AT 25.5 DEG. CLAI.

MELTING POINT (DEG. CENT.) = -12.0 REFERENCE: E100-41 VOL 1 METASTABLE

REFRACTIVE INDEX(ND)= 1.4287 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND)= 1.4438 - .00038*TEMPERATURE(C.) DETERMINED DVER THE TEMPERATURE RANGE

15.0 TO 30.0 DEG. CENT. REFERENCE: CRLR164

15.0 TO 30.0 DEG. CENT. REFERENCE: CALCULATEd

15.0 TO 30.0 DEG. CENT. REFERENCE: CALCULATED

REFERÊNCE: WATER ETF 100-41 REFERENCE: WATER ETF 100-41 REFERENCE: ETF 103-41 VOL 1 <-30 DEG C -12.000 REFERENCE: ETF 100-41 VOL 1, METASTABLE .510+01 AT MELTING POINT DEPRESSION(DEG. C./MOLE)= SOLUBILITY(G/100G SOLVENT) .510+01 A

.0 DEGREE CENTIGRADE 20.0 DEGREE CENTIGRADE .370+01 AT SOLUBILITY (G/ 100G SOLVENT) ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

ATR 30.44 CC/MOLE 500.87 3597 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .056 DIFFUSION COEF.

VISCUSITY OF VAPOR = 6.50-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)

40.0 DEGREES ۲ 1212 END OF COMPOUND EA

ဖွ

PAGE NUMBER B-

ZHURN. FIZ KHEM. 37. 201 (1963)

*TEMP. (C.) DETERMINED OVER GENERAL REFERENCE: TOMR1292 THEREFORE THE LIQUID PROPERTIES ARE .00097 -40.0 DEGREES CENTIGRADE REFERENCE: TOWR1292 REFERENCE: TOMR1292 1.0531 -VAPOR PRESSURE(TORR)= .22+02 AT 84.0 DEG. CENT. REFERENC DENSITY(G/ML)= 1.0919 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CFMT **** **ARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. VALID ONLY FOR SUPECCOLED LIQUID AND NOT THE SOLID **** FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** REFERENCE: TDMR1292

DETERMINED OVER 189.2 ţ THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.92419, B= -495.20, TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TDMR 1292 WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 24.864

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TOMR1292 24.8 AT 26.0 DEG. CENT. 25.0 DEG. CENT. RE -18.80 REFERENCE: IDMR1292 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3980 AT FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE Ή

28.49 CC/MOLE 504.25 397.22 Sta/CC .3335

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .029 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EG., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.61-D3 CENTIPDISE

ပ -40.0 DEGREES ۲ 1213 END OF COMPOUND EA

67

NUMBER

PAGE

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TOMR1292 THEREFORE THE LIQUID PROPERTIES AME -20.0 DEGREES CENTIGRADE S BELOW THE MELTING POINT. FORMULA WEIGHT: ***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MI SUMMARY OF PROPERTIES OF EA

PRESSURE(TORR)= VAPOR

.00097 *TEMP.(C.) DETERMINED OVER REFERENCE: TOWR1292 REFERENCE: TOWR1292 IURR)= .22+02 AT 84.0 DEG. CENT. REFERENCE: TDMR12
TGRN)= .55+00 AT 25.0 DEG. CENT. REFERENCE: TDMR12
1.0725 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0531 -RANGE 10.0 TO 50.0 DEG. CENT VAPOR PRESSURE(TORR)= THE TEMPERATURE NANGE DENSI TY (G/ML) =

THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF DETERMINED OVER THE 189.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.92419, B= -495.20, C= TEMPERATURE RANGE 16.0 TO 50.0 DEG. CENT. REFERENCE:TDMR 1292 WERE USED TO CALCULATE THE VISCOSITY

10.072 VISCOSITY (CENTISTOKES)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TOMR1292 REFERENCE: TOMR1292 24.8 AT 26.0 DEG. CENT. 25.0 DEG. CENT. RE -18.80 REFERENCE: TDMR1292 ۲ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3980

FREEZING POINT (DEG. CENT.)

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. CC/MOLE VOLUME DENSITY TEMPERATURE GM/CC DEG C .3335 397.22 5 꾶

DIFFISION COEF.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035

CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

-20.0 DEGREES

۲

1213

END OF COMPOUND EA

PAGE NUMBER

201 (1963)

37.

ZHURN. FIZ KHIM.

GENERAL REFERENCE: TOMR1292 .O DEGREES CENTIGRADE FORMULA WEIGHT: AT SUMMARY OF PROPERTIES OF EA

DATA TO ESTIMATE WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 +TEMP.(C.) DETERMINED QVER REFERENCE: TOMA1292 REFERENCE: TOMA1292 VAPOR PRESSURE(TORM) # .22+02 AT 84.0 DEG. CENT. REFERENCE: TDMR129 DENSITY(G/ML) = 1.0531 MAS CALCULATED FROM THE EQUATION: DENSITY = 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0531 - 1.0

** *** RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 189.2 -495.20, C= 16.00STANTS(EATR 4491): A* -1.92419, 8= -495 THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= TEMPERATURE RANGE

WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TOMR1292 REFERENCE: TOMR1292 24.8 AT 26.0 DEG. CENT. 25.0 DEG. CENT. -18.80 REFERENCE: TDMR1292 AT SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3980 FREEZING POINT (DEG. CENT.) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/NOLE GM/CC . 3335 出

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .042 DIFFUSION COEF.

28.49

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR - 5.55-03 CENTIPOISE

.0 DEGREES C. ۲ 1213 END OF COMPOUND EA

PAGE NUMBER B-

GENFRAL REFERENCE: TDMR1292 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1213 Ę SUMMARY OF PROPERTIES OF COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .22+02 AT 84.0 DEG. CENT. REFERENCE: TDMR1292 VAPOR PRESSURE(TORR)= .55+00 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 DENSITY(G/ML)= 1.0337 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0531 - .(THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292

DETERMINED OVER THE

189.2 ů FS(EATR 4491): A= -1.92419, B= -495.20, 50.0 DEG. CENT. REFERENCE:TDMA 1292 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 2.775 THE FOLLOWING ANTOINE CONSTANTS(EATR TEMPERATURE RANGE 10.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

REFERENCE: TOMR1292 24.8 AT 26.0 DEG. CENT. 25.0 DEG. CENT. -18.80 REFERENCE: TDMR1292 SURFACE TENSION (DYNES/CM) *
REFRACTIVE INDEX(UD) * 1.3980 AT FREEZING POINT (DEG. CENT.) =

ZHURN. FIZ KHIM. 37. 201 (1963) WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE FOLLOWING CRITICAL PROPERTIES DUNSITY TEMPERATURE VOLUME Ή

ATM. CC/MOLE 504.25 397.22 GM/CC . 3335

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 670. DIFFUSION COEF.

20.0 DEGREES ¥ 1213 END OF COMPOUND EA

2 PAGE NUMBER 8-

CENTIPOISE

Appendix B

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 6.02-03

98

ZHURN. F12 KHIM. 37. 201(1963)

GENERAL REFERENCE: TOWR1292 25.0 DEGREES CENTIGRADE 168.1 1213 AT 25. 2 SUMMARY OF PROPERTIES OF COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPCE PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ****

.00097 .TEMP.(C.) DETERMINED CIVER TORR)* .22+02 AT 84.0 DEG. CENT. REFERENCE: TDMR1292 1.0289 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0531 - .0 RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292 PRESSURE(TORR) = PRESSURE(TOPR) = DENSITY (G/ML) = V 1 POR

DETERMINED OVER THE 189.2 THE TEMPERATURE RANGE

TEMPERATURE RANGE 10.0 TO 50.6 DEG. CENT. REFERENCE: TOWN 1292
WERE USED TO CALCULATE THE VISCOSITY

2.444 VISCOSITY (CENTISTOKES) .

REFERENCE: TOMR1292 REFERENCE: TOMR1292 REFERENCE: TOWR1292 26.0 DEG. CENT. 24.8 AT 26.0 DEG 25.0 DEG. CENT. -18.80 ¥ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3980 FREEZING POINT (DEG. CENT.) = 1.3980

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Ŧ

PRESSURE ATM. CC/MOLE 504.25 DENSITY TEMPERATURE VOLUME 397.22 GM/CC . 3335 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .051 DIFFUSION COEF. * THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 6.14-03 CENTIPOISE

25.0 DEGREES C. ۲ 1213 END OF COMPOUND EA

2

PAGE NUMBER B-

Appendix B

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TOWR1292 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1213 SUMMARY OF PROPERTIES OF EA COMMON NAME:

THE STATE OF THE SAME WHEN

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.CO097 +TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TURR)= .22+02 AT 84.0 DEG. CENT. REFERENCE: TDMR1292 VAPOR PRESSURE(TORR)= .55+00 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 DENSITY(G/ML)= 1.0143 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0531 - .(THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292

DETERMINED OVER THE

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.92419, B= -495.20, C= 189.2 TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TOMR 1292 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)+

REFERENCE: TDMR1292 24.8 ÅT 26.0 DEG. CENT. 25.0 DEG. CENT. -18.80 REFERENCE: INMP1 ¥ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(NE) = 1.3980 FREEZING POINT (DEG. CENT.) =

REFERENCE: TOMR1292

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GH/CC DEG C CC/MOLE ATM. 3335 397.22 504.25 28.49 표

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.50-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING FME MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) DIFFUSION COEF.

END OF COMPOUND EA 1213 AT 40.0 DEGREES C.

PAGE NUMBER B-

-40.0 CEGREES CENTIGRADE FORMULA WEIGHT: 210.1 1214 SUMMARY OF PROPERTIES OF EA

WARNING: SINCE THERE IS NO BOIL!NG POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA KANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: TOMR1292

TORR)* .30+01 AT 105.0 DEG. CENT. REFERENCE: TDMR1292 APROX (0.04 TU 0.08)
10:R)* .60-01 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 APROX (0.04 TU 0.08)
1.0566 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0210 - .00089 *TEMP.(C.) DETERMINED QVER REFERENCE: TOMR1292 50.0 DEG. CENT. 10.0 10 VAPOR PRESSURE(TORR) = VAPOR PRESSURE(TORR) = THE TEMPERATURE RANGE DENSITY (G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 178.6 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As. -1.96037, Bs. -502.19, TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TOWR 1292 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) = 45.948

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TOMR1292 27.3 AT 25.0 DEG. CENT. REFERENCE: TDMR129: 23.5 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TDMR-1292 DID NOT FREEZE TO-78 -78.00 SURFACE TENSION (DYNES/CM) * REFRACTIVE INDEX(ND)* 1.4190 AT FREEZING POINT (DEG. CENT.)* ZHURN. FIZ KHIM. 37. 201(1963) THE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 3198 427.58 657.03 22.86

.024 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48.23(1944)

ن -40.0 DECREES ¥ END OF COMPOUND EA 1214

73

MUMBER

PAGE

Appendix B

UNCLASSIFIED

101

GENERAL "SFERENCE: TOWR1292 EA 1214 AT -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 210.1 SUNTARY OF PROPERTIES OF COMMON NAME:

IS NO VAPOR PRESSURE DATA TO ESTIMATE ***** WARNING: SINCF THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE: ABOVE BOILING POINT AND NOT MEANINGFUL

.00089 +TEMP.(C.) DETERMINED OVER REFERENCE: TDMR1292 TEMP. +-1 DEG. REFERENCE: TDMR1292 APROX (0.04 TD 0.08) 108R)= .30+01 AT 105.0 DEG. CENT. REFERENCE: TDWR12910RR)= .60-01 AT 25.0 DEG. CENT. REFERENCE: TDWR1291.0388 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0210 - RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292 PRESSURE (TORR) = THE TEMPERATURE RANGE DENSITY (G/ML) = VAPOR

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 178.6 -502.19, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.96037, B= -502. TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292. WERE USED TO CALCULATE THE VISCOSITY.

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

16.051

VISCOSITY (CENTISTOKES).

REFERENCE: TOWR1292 27.3 AT 25.0 DEG. CENI. 23.5 DEG. CENT. -78.00 REFERENCE: TDMR-1292 DID NOT FREEZE 10-78 SURFACE TENSION (DYNES/CM) *
REFRACTIVE INDEX(ND)* 1,4190 AT
FREEZING POINT (DEG. CENT.)*

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 포

Gil/CC DEG C CC/MOLE ATM.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 4.62-03 CENTIPDISE

PAGE NUMBER 8-

-20.0 DEGREES C.

¥

END OF COMPOUND EA 1214

Appendix B

201 (1963)

37.

ZMURN. FIZ KHIM.

.0 DEGREES CENTIGRADE 210.1 FORMULA WEIGHT: 1214 ¥ SUNTIARY OF PROPERTIES OF COMPSON NAME:

GENERAL REFERENCE: TOWR1292

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL TORR)* .30+01 AT 105.0 DEG. CENT. REFERENCE: TOWR1292 TEMP, +-1 DEG. 10RR)* .60-01 AT 25.0 DEG. CENT. REFERENCE: TOWR1292 APROX (0.04 TO 0.09) 1.0210 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0210 - .00089 *TEMP.(C.) DETERMINED OVER PRESSURE(TORR) = PRESSURE(TORR) = THE TEMPERATURE RANGE DENSI TY (G/ML) = VAPOR VAPOR ****

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** REFERENCE: TOMR1292 50.0 DEG. CENT. 10.0 10

DETERMINED OVER THE 178.6 ů WERE USED TO CALCULATE THE VISCOSITY (CENTISCOSITY (CENTISTORES).

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TDMR1292 27.3 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 23.5 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TDMR-1292 DID NOT FREEZE TO-78 Y SURFACE TENSION (DYNES/CM) #- REFRACTIVE INDEX(ND)# 1.4190 FREEZING POINT (DEG. CENT.)*

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE DENSITY TEMPERATURE VOLUME AIM. 775

657.03 427.58 3198

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .034 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

.0 DCGREES C. ¥ 1214 END OF COMPOUND EA

2

ENERGY

PAGE

Appendix B

SSI

103

1214 AT 20.0 DEGREES CENTIGRADE FORMULA MEIGHT: 210.1 Z SUMMARY OF PROPERTIES OF COMMON NAME:

GENERAL REFERENCE: TOMR1292

DATA TO ESTIMATE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

REFERENCE: TDMR1292 TEMP, +-1 DEG. REFERENCE: TDMR1292 APROX (0.04 TO 0.09) ENSITY* 1.0210 - .00089 +TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)* .30401 AT 105.0 DEG. CENT. REFERENCE: TDMR129 VAPOR PRESSURE(TORR)* .60-01 AT 25.0 DEG. CENT. REFERENCE: TDMR129 DENSITY(G/ML)* 1.0032 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0210 — THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292 REFERENCE: TOWR1292 .30+01

DETERMINED OVER 178.6 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= "1.96037, B= -502.19, C= TEMPERATURE RANCE 10.0 TO 50.0 DEG. CENT. REFERENCE:TDMR 1292 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 3.698

REFERENCE: TOWR1292 27.3 AT 25.0 DEG. CENT. REFERENCE: TDMA129; 23.5 DEG. CENT. REFERENCE: TDKR1292 -78.00 REFERENCE: TDMR-1292 DID NOT FREEZE TO-78 71 SURFACE TENSION (DYMES/CM) = REFRACTIVE INDEX(ND) = 1.4190 FREEZING POINT (DEG. CENT.) =

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. THE

PRESSURE ATM DENSITY TEMPERATURE VOLUME

657.03 . 3198

.040

DIFFUSION COEF. .

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.48-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

PAGE NUMBER B-

20.0 DEGREES C.

¥

END OF COMPOUND EA 1214

92

Appendix B

SSIFIED

104

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TOWR1292 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: AT 1214 E SUMMARY OF PROPERTIES OF COMMON NAME:

THE TANK THE WAR INTEREST WATER

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR)= .30+01 AT 105.0 DEG. CENT. REFERENCE: TDMR1292 TEMP. +-1 DEG.
VAPOR PRESSURE(TORR)= .60-01 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 APROX (0.04 TO 0.08)
DENSITY(G/ML)= .9488 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0210 - .00089 *TEMP.(C.) DETERMINED OVER THE TEMFERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292

DETERMINED OVER THE THE FULLOWING ANTOINE CONSTANTS(EATR 4491): As -1.96037, Br. -502.19, C= 178.8 TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. PEFERENCE: TOWN 1292 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES).

27.3 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 23.5 DEG. CENT. REFERENCE: TDMR1292 -78.00 REFERENCE: TDMR-1292 DID NOT FREEZE TG-78 SURFACE TENSION (DYMES/CM) = REFRACTIVE INDEX(ND)= 1.4190 AT FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC () FG C CC/MOLE ATM. CC/MOLE 657.03 427.58 3198 ፗ

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.59+03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

1214

END OF COMPOUND EA

AT 25.0 DEGREES C. PAGE NUMBER

7

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TOWR1292 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 210.1 AT 1214 SUMMARY OF PROPERTIES OF EA

DATA TO ESTIMATE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

PRESSURE(TORR)= .30+01 AT 105.0 DEG. CENT. REFERENCE: TDMR1292 TEMP. +-1 DEG.
PRESSURE(TORR)= .60-01 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 APROX (0.04 TO 0.08)
TY(G/ML)= .9.54 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0210 - .00089 *TEMP.(C.) DETERMINED OVER
EMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292 THE TEMPERATURE RANGE DENSITY (G/ML) = V APOR V APOR

DETERMINED OVER THE 178.6 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.96037, B= -502.19, C* TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TOWN 1292 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)=

25.0 DEG. CENT. REFERENCE: TDMR1292 REFERENCE: TDMR-1292 DID NOT FREEZE TO-78 27.3 AT 25.0 DEG. CENT. 23.5 DEG. CENT. -78.00 REFERENCE: TDMR-1 SURFACE TENSION (DVNES/CM) = 2 REFRACTIVE INDEX(ND) = 1.4190 AT FREEZING POINT (DEG. CENT.) = -

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 427.58 DEG C .3198 32/cg IHE

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR S DIFFUSION COEF. * .046 CM.SQ./SEC CALCUSTON THE VISCOSITY OF THE VAPOR WAS ESTIMATED JSING OF MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1214

ပဲ 40.0 DEGREES ¥ 1214

78 PAGE NUMBER B-

37. 201 (1963)

ZHURN. FIZ KHIM.

ပ

GENERAL REFERENCE: TCR36 -40.0 DEGREES CENTIGRADE 218.2 FORMULA WEIGHT: ۲ 1230 ¥ SUMMARY OF PROPERTIES OF COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOIL NG POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 +TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR) = .10+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.2966 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2578 - THE TEMPERATURE RANGE 10.0 10 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOYE VALUES ARE EXTRAPOLATED OUT

RANGE

OF THE DATA TEMPERATURE

DETERMINED OVER THE 80.3 -1.25660, B= -259.14, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.25660, B= -259.14 Perature range 10.0 to 50.0 deg. cent. Reference:tcr 36 p. 6 WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

VISCOSITY(CENTISTOKES)= 151368.965

**** OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO 40.0 AT 24.5 DEG. CENT. 24.5 DEG. CENT. -78.00 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.4940 AT FREEZING POINT (DEG. CENT.) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 뿚

ATR. 29.31 CC/MOLE 566.28 DEG C 501.36 GtA/CC . 3853 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR ,027 DIFFUSION COEF. - THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.38-03 CENTIPOISE

PAGE NUMBER

ပ

-40.0 DEGREES

¥

1230

END OF COMPOUND EA

Appendix B

SSI

GENERAL REFERENCE: TCR36 1230 AT -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 218.2 SUMMARY OF PROPERTIES OF EA COMMON NAME:

シューロックラスを大きの間がみながらない。同時には、これなど

いとはなる。

The state of the s

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)* ,10+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)* 1.2772 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.2578 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 80.3 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.25660, B= -259.14, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P. 6 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTONES) = 1105.963

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

24.5 DEG. CENT. REFERENCE: TCR36
EG. CENT. REFERENCE: TCR36
REFERENCE: TCR36 DID NOT FREEZE TO -78 40.0 AT 24.5 DEG. CENT. 24.5 DEG. CENT. -78.00 REFERENCE: TCR36 ۲ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.4940 FREEZING POINT (DEG. CENT. >= ZHURN. FIZ KHIM. 37. 201 (1983) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE Ŧ

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR ATH. 29.31 CC.'NOLE 566.28 GM/CC . 3853

.032

DIFFUSION COEF. .

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.84-03 CENTIPOISE

-20.0 DEGREES C. ¥ END OF COMPOUND EA 1230

PAGE NUMBER B-

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR36 , 1230 AT .. O DEGREES CENTIGRADE FORMULA WEIGHT: 218.2 2 SUMMARY OF PROPERTIES OF COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)* .10+00 AT 25.9 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)* 1.2578 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.2578 -THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 80.3 THE FOLLOWING ANTOINE CONSTANTS[EATR 4491): A* -1.25660, B* -259.14, C* TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P. 6
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 93.787

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

EG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 C 24.5 DEG. CENT. 40.0 AT 24.5 DEC 24.5 DEG. CENT. ~78.00 REFERENCE SURFACE TENSION (DYNES/CM) *
REFRACTIVE INDEX(ND) = 1.4940
FREEZING POINT (DEG. CENT.)*

311

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.

.3853 501.36 568.28 29.31

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .038 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR - 5.31-03 CENTIPOISE

.0 DEGREES C. Ħ 1230 END OF COMPOUND EA

PAGE NUMBER B- 81

GENERAL REFERENCE: TCR36 1230 AT 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 218.2 SUMMARY OF PROPERTIES OF EA COMMON NAME: ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 +TEMP.(C.) DETERMINED OVER IORR)= .10+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 1.2384 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2578 --VAPOR PRESSURE(TORR)= DENSITY (G/ML) =

DETERMINED OVER THE 80.3 REFERENCE: TCR36 50.0 DEG. CENT. 10.0 THE TEMPERATURE RANGE

-259.14, C* THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.25660, B* -259.14
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P. 6
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)* 21.285

ပ REFERENCE: TCR36 -78 REFERENCE: TCR36 DID NOT FREEZE TO REFERENCE: TCR36 CENT. 24.5 DEG. 40.0 AT 24.5 DEG 24.5 DEG. CENT. -78.00 REFERENCE SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.4940 AT FREEZING POINT (DEG. CENT.)=

ZMURN. FIZ KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE DENSITY TEMPERATURE VOLUME ₽ NC

ATM. 29.31 CC/MOLE 566.28 DEG C . 3853 SM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 440. OIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.77-03 CENTIPOISE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

20.0 DEGREES C.

۲

1230

END OF COMPOUND EA

PAGE NUMBER B-

8

GENERAL REFERENCE: TCR36 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: ¥ SUMMARY OF PROPERTIES OF EA 1230 COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 +TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .10+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.2338 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2578 - THE TEMPERATURE RANGE 10:0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 80.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.25660, B= -259.14, C= perature range 10.0 to 50.0 deg. cent. Reference: TCR 36 P. 6 THE FOLLOWING ANTO! TEMPERATURE RANGE

TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR 3
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 16.043

REFERENCE: TCR36 40.0 AT 24.5 DEG. CENT. REFERENCE: TCR36 24.5 DEG. CENT. REFERENCE: TCR36 -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 SURFACE TENSION (DYNES/CM) *
REFRACTIVE INDEX(ND)* 1.4940 AT
FREEZING POINT (DEG. CENT.)*

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. E VOLUME CC/NOLE 566.28

.3853 501.36 566.28 29.31
DIFFUSION COEF. * .046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.RHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.89-03 CENTIPOISE

25.0 DEGREES C.

4

1230

END OF COMPOUND EA

PAGE NUMBER 3- 83

Z.IURN. FIZ KHIM. 37. 201 (1963)

Ç

GENERAL REFERENCE: TCR36 1 1230 AT 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 218.2 SUMMARY OF PROPERTIES OF EA

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

*TEMP. (C.) DETERMINED OVER .00097 VAPOR PRESSURE(TORR)= .10+00 AT 23.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.2190 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2578 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 80.3

TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P. 6
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTORES)= 7.911

40.0 AT 24.5 DEG. CENT. REFERENCE: TCR36 24.5 DEG. CENT. REFERENCE: TCR36 -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 SURFACE TENSION (DYNES/CM) # REFRACTIVE INDEX(ND) # 1.4940 AT FREEZING POINT (DEG. CENT.) #

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. 29.31 CC/MOLE 566.28 3853 GIA/CC Ŧ

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .051 DIFFUSION COEF. .

VISCOSITY OF VAPOR = 6.24-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.24-03 (

40.0 DEGREES C. ¥ 1230 END OF COMPOUND EA

2

PAGE NUMBER 8-

SSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR38 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 112.1 1232 SUMMARY OF PROPERTIES OF EA COMMON NAME:

11.11.66

2000 N

And the State of the State of

To the state of th

1

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00129 *TEMP.(C.) DETERBINED OVER VAPÚR PRESSURE(TORR)= .38+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.3231 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2715 -THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.18494, B= -654.91, C= 273.2 TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.7 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) = 4.207

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 REFERENCE: TCR36 30.9 AT 25.0 DEG. CENT. 24.5 DEG. CENT. -67.00 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) # REFRACTIVE INDEX(ND) # 1.3720 FREEZING POINT (DEG. CENT.) #

Ŧ

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CM/CC DEG C CC/MOLE ATM. .4108 347.88 272.74 48.80

CK.SO./SEC CALCULATED FOR VAPOR IN AIR . 645 DIFFUSION COEF. .

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.97-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

-40.0 DEGREES 7 1232 END OF COMPOUND EA

PAGE NUMBER B-

Appendix B

SSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TCR36 1232 AT -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 112.1 SUMMARY OF PROPERTIES OF EA

AND SOUND SOUND SECTIONS ASSESSED FOR THE SOUND SOUND

The state of the s

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00129 +TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .38+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.2973 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2715 -THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE YALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 273.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -2.18484, 3= -654.91, C= PETATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.7 THE FOLLOWING ANTO TEMPETATURE RANGE

FEMPE ATURE RANGE 9.5 TO 50.0 DEG. WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 2.524

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 30.9 AT 25.0 DEG. CENT. 24.5 DEG. CENT. -67.00 REFERENCE: TCR36 ¥ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3720 FREEZING POINT (DEG. CENT.) =

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 王

DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. .4108 347.88 272.74 48.80

 ABOVE CRITICAL PRO-ERTIES AND THE VISCOSITY OF VAPOR # 6.58-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

PAGE NUMBER 8- 86

ပ

-20.0 DEGREES

AT

END OF COMPOUND EA 1232

Appendix B

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TCR36 .0 DEGREES CENTIGRADE 112.1 GEN FORMULA WEIGHT: OF PROPERTIES OF EA 1232 COMMON NAME: FORMULA SURTIARY

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00129 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR) = .38+01 AT 25.0 DEG. CENT. REFERENCE: TCR38 DENSITY(G/ML) = 1.2715 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 - 1HE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 273.2 IS(EATR 4491): A. -2.18484, B. -654.91, C. 50.0 DEG. CENT. REFERENCE: TCR36 P.7 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. 1.632 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 9.5 10 TEMPERATURE RANGE

**** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLÁTED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 24.5 DEG. CENT. -67.00 REFERENCE: 1CR36 SURFACE TENSION (DYMES/CM) = REFRACTIVE INDEX(ND)= 1.3720 AT FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE ATM. 1**.**E

1 48.80 CC/MOLE 272.74 347.08 4108 CH.SQ./SEC CALCULATED FOR VAPOR IN AIR .065 DIFFUSION COEF. . ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 7.18-03 CENTIPOISE THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE MODIFIED SUTHERLANDS . EQ., J. PHY. CHEM, 48, 23(1944)

PAGE MUMBER B- 87

.0 DEGREES C.

¥

1232

END OF COMPOUND EA

GENERAL REFERENCE: TCR36 20.0 DEGREES CENTIGRADE 1232 AT 20.0 DEGRI FORMULA WEIGHT: 112.1 SUMMARY OF PROPERTIES OF EA 1232

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE, ABOVE BOILING POINT AND NOT MEANINGFUL

.00129 *TEMP.(C.) DETERMINED OVER .38+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 MAS CALCULATED FROM THE EQUATION: DENSITY 1.2715 - 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.2457 THE TEMPERATURE RANGE VAPUR PRESSURE(TORRI= DENSITY(G/ML)=

DETERMINED OVER THE 273.2 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): As -2.18484, Bs -654.91, C= TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.7 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

REFERENCE: TCR36 25.0 DEG. CENT. REFERENCE: TCR36 30.9 AT 25.0 DE 24.5 DEG. CENT. SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3720 AT FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. ¥

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.78-03 CENTIPDISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .075 DIFFUSION COEF. 4108

PAGE NUMBER B-20.0 DEGREES C. AT ENJ OF COMPOUND EA 1232

8

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR36 1 1232 AT 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: 112.1 Ę SUMMARY OF PROPERTIES OF COMMON MAME: + - + + WARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00129 .TEMP.(C.) DETERMINED OVER TORR)= .38+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 1.2392 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2715 -RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36 VAPOR PRESSURE(TORR)= DENSITY(G/MC)= 1.2392 THE TEMPERATURE RANGE

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.18484, B= -654.91, C= 273.2 TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.7

WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 1.0

REFERENCE: TCR36 30.9 AT 25.0 DEG. CENT. 24.5 DEG. CENT. -67.00 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3720 AT FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GIA/CC DEG C CC/MOLE ATM. N THE

E VOLUME CC/MOLE 272.74 347.88

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .078 DIFFUSION COEF. .

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUFHERLANDS EQ., J.PHY.CHEM.48,23(1944)

PAGE NUMBER

25.0 DEGREES C. ۲ 1232 END OF COMPOUND EA

SSIFIED

GENERAL REFERENCE: TCR36 SUMMARY OF PROPERTIES OF EA 1232 AT 40.0 DEGREES CENTIGRADE COMMON NAME: FORMULA WEIGHT: 112.1

***** WARNING: SINCE THERE IS NO BOILING FOINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00129 +TEMP.(C.) DETERMINED OVER VYPOR PRESSURF(TORR)= .38+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.2199 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2719 = 1.2715 = 1.2715

DETERMINED OVER THE NERE HISED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTETANCE) REFERENCE: TCR36 50.9 DEG. CENT. 9.5 10 THE TEMPERATURE RANGE

REFERENCE: TCR36 REFERENCE: TCR36 30.9 AT 25.0 DEG. CENT. 24.5 DEG. CENT. -67.00 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3720 AT FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure Ŧ

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR ATM. CC/MOLE .087 DIFFUSION COEF. 347.88 . 4108 22/115

VISCOSITY OF VAPOR . 8.38-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE STHE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE SMODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1232

40.0 DEGREES C. ۲

8

PAGE NUMBER 8-

ZHURN. FIZ KHIM. 37. 201 (1963)

-40.0 DEGREES CENTIGRADE 1244 OF PROPERTIES OF EA SCHUBARY

**** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIGUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00097 *TEMP.(C.) DETERMINED OVER VAPOR PHESSURE(TURR)* .20-0) AT 30.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML): 1.2854 WAS CALCYLATED FROM THE EQUATION: DENSITY* 1.2466 --

**** WARRING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 154.7 -506.85, C= IE CCNSTANTS(EATR 4491): A= -1.94420, B= -506 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.8 THE FOLLOWING ANTOINE CONSTANTS (EATH 4491): As WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTORES)= TEMPERATURE RANGE

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

PEFERENCE: 1CR38 REFERENCE: TCR36 23.2 DEG. CENT 25.0 DEG. CENT. 37.8 AT REFRACTIVE INDEX(ND)= 1.4520 AT SHRFACE TENSION (DYNES/CM) =

FOLLOWING CRITICAL PROPERTIES MERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. CC/more SCINSTIY TEMPERATURE VOLUME Gil/CC **T**E

514.03

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

VISCOSITY OF VAPOR - 4.46-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESITMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

-40.0 DEGREES ¥ 1244 END OF COMPOUND EA

5

PACK NUMBER B-

Appendix B

SSIFIED

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** WARNING: SINCE THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE **** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: TCR38 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 196.6 SUMMARY OF PROPERTIES OF EA

.00097 *TEMP. (C.) DETERMINED OVER VAFOR PRESSURE(TORR)= .20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.2560 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2466 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.94420, B= -506.95, C= 154.7
PERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.8 65.833 MENE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)* TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 23.2 DEG. CENT 25.0 DEG. CENT. 37.8 AT REFRACTIVE INDEX(ND)= 1.4520 AT TENSION (DYNES/CM) SURFACE

ZHURN. FIZ KAIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE DENSITY TEMPERATURE VOLUME THE

. GM/CC DEG C CC/MOLE ATM. .3824 495.65 514.03 32.05 ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.93-03 CENTIPOISE THE VISCOSITY OF THE VALCE WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

PAGE NUMBER 8- 92

-20.6 DEGREES C.

¥

1244

END OF COMPOUND EA

Appendix B

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

CALCULATION OF VALUES BELOW DATA RANGE MAY NOT REFERENCE: TCR36 GENERAL WARNING: SINCE THERE IS NO BOLLING POINT DATA FOR THIS COMPOUND AND THERE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE .0 DEGREES CENTIGRADE BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** THERE IS NO MELTING POINT FOR THIS COMPOUND, FORMULA WEIGHT: 1240 PROPERTIES OF EA **** WARENGE

IS NO VAPOR PRESSURE DATA TO ESTIMATE BOILING POINT AND NOT MEANINGFUL VAPOR PRESSURE(TORRIE

.00097 *TEMP.(C.) DETERMINED DVER TORR)= .20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 1.2466 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2466 - RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 THE TEMPERATURE RANGE DENSITY (G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE OF THE DATA TEMPERATURE RANGE 154.7 ڹ -506.85, S(EATR 4491): A# -1.94420, B# -506 50.0 DEG. CENT. REFERENCE:TCR36 P.8 FULLOWING ANTOINE CONSTANTS (EATR 4491): PERATURE RANGE 10.0 TO 50.0 DEG. CENT WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

21.479 VISCOSIFY(CENTISTOKES) .

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** REFERENCE: TCR36 37.8 AT 23.2 DEG. CENT. 25.0 DEG. CENT. SURFACE TENSION (DYNES/CM) = REFNACTIVE INDEX(ND)= 1.4520 AT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY, DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE ATM. 띺

CC/MOLE 514.03 495.65 G41/CC .3824

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 5 DIFFUSION COEF.

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE IFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 5.40-03 CENTIPOISE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

.0 DEGREES ¥ 1244 END OF COMPOUND EA

PAGE NUMBER

8

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOGUS TO SPECIFIED TEMPERATURE *****
*** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: OF PROPERTIES OF EA COMMON NAME:

.00097 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR) = .20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.2272 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2466 --THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER 154.7 ů THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.94420, B= -506.85, TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.8 WERE USED TO CALCULATE THE VISCOSITY 9.057 VISCOSITY(CENTISTOKES)=

REFERENCE: TCR36 CENT. 37.8 AT 23.2 DEG. 25.0 DEG. CENT. ¥ 1.4520 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.452

ZHURN. FIZ KHIM. 37. 201 (1963) OF FILIPPOV. FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD DENSITY TEMPERATURE VOLUME PRESSURE PRESSURE ATM. CC/MDLE 514.03 495,65 .3824 표

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.87-03 CENTIPOISE CM.SO./SEC CALCULATED FOR VAPOR IN AIR VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TH MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) DIFFUSION COEF.

20.0 DEGREES C. PAGE NUMBER B-

AT

1244

END OF COMPGUND EA

8

Appendix B

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** GENERAL REFERENCE: TCR36 25.0 DEGREES CENTIGRADE FORMULA MEIGHT WARNING: SINCE THERE IS NO MELTING POINT FOR THIS SUMMARY OF PROPERTIES OF EA

.00097 *TEMP.(C.) DETERMINED DVER VAPOR PRESSURE(TORR)=

.20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.2466 - 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.2224 THE TEMPERATURE RANGE

DETERMINED OVER THE 154.7 ů FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.94420, B= -506.85, PEATUNE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.8 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= THE FOLLOWING ANTO TEMPERATURE RANGE

REFERENCE: TCR36 37.8 AT 23.2 DEG. CENT. 25.0 DEG. CENT. REFRACTIVE INDEX(ND) = 1.4520 AT SURFACE TENSION (DYNES/CM)

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE AIM. THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .049 DIFFUSION COEF.

VISCOSITY OF VAPOR = 5.99-03 CENTIPOISE PROPERTIES AND THE ABOVE CRITICAL VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48.23(1944)

25.0 DEGREES AT END OF COMPDUND EA 1244

PAGE NUMBER B-

Appendix B

표 SSIFIED

495.65

.3824

ZHURN. FIZ KHIM. 37. 201(1963)

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00097 +TEMP.(C.) DETERMINED OVER SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: TCR36 DETERMINED OVER THE 40.0 DEGREES CENTIGRADE .20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2466 - 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 154.7 ů FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.94420, B= -506.85, PERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.8 FORMULA WEIGHT: PROPERTIES OF EA THE FOLLOWING ANTOINE CONSTANTS(EATR TEMPERATURE RANGE 10.0 TO 50.0 DE WERE USED TO CALCULATE THE YISCOSITY DENSITY(G/ML) = 1.2078 THE TEMPERATURE RANGE VAPOR PRESSURE(TORR)= **** EARNING:

AND THE PROPERTY OF THE PROPER

REFERENCE: TCR36 37.8 AT 23.2 DEG. CENT. 25.0 DEG. CENT. SURFACE TENSION (DYNES/CM) ** REFRACTIVE INDEX(ND)* 1.4520 AT

VISCOSITY (CENTISTOKES)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 495.65 . 3824 뿔

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.35-03 (

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

40.0 DEGREES C, ¥ 1244 COMPOUND EA

END OF

PAGE NUMBER B-

UNCLASSIFIED

DIFFUSION COEF.

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL INING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT WARNING: SINCE THERE IS NO BATTA RANGE MAY NOT WARNING: SINCE THERE IS NO BATTALLY CONTINUED THE PARTY OF TH -40.0 DEGREES CENTIGRAD OF PROPERTIES OF EA SUMMARY

AND THE PROPERTY OF THE PROPER

.00089 *TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR) = .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 VAPOR PRESSURE(TORR) = .65-01 AT 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.1208 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0852 -THE TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT 50.0 DEG. CENT. 10.0 TO

RANGE

OF THE DATA TEMPERATURE

DETERMINED OVER THE 219.3 -711.47, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.38600, B = -711, PERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.9 38.239 WERE USED TO CALCULATE THE VISCOSITY VISCOSI TY (CENTISTOKES). THE FOLLOWING AMILENTER TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 CENT 21.8 DEG. 34.2 AY 21.8 DE 23.0 DEG. CENT. SURFACE TENSION (DYNES/CM) # REFRACTIVE INDEX(ND)# 1.4290 AT

FIZ KHIM. 37. 201(1983) ZHURN. FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATE. CC/MOLE 524.18 DENSITY TEMPERATURE VOLUME 0:3/cc THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .028 DIFFUSION COEF.

30.10

IVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.30-03 CENTIPOISE ABOVE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944).

ပ -40.0 DEGREES ¥ 1245 OF COMPOUND EA ENO

9 å

PAGE

Appendix B

UNCLASSIFIED

WARNING: SINCE THERE IS NO BOLLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ***** WARNING: SINCE THERE IS NO KELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE WAY NOT

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO -20.0 DEGREES CENTIGRADE 1245 SUMMARY OF PROPERTIES OF EA

.00089 +TEMP.(C.) DETERMINED OVER TORR)= .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 TORR)= .65-01 AT 50.0 DEG. CENT. REFERENCE: TCR36 1.1030 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0852 -VAPOR PRESSURE(TORRIE WAPOR PRESSURE(TORRIE THE TEMPERATURE RANGE DENSITY (G/ML) -

REFERENCE: TCR36 50.0 DEG. CENT. 10.0 10

DETERMINED OVER THE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 219.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.38600, B= -7:1,47, C* PERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.9 TEMPERATURE RANGE

15.283 USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) * **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 CEN1. 21.8 DEG. 34.2 AT 21.8 DE/ 23.0 DEG. CENT. 7 REFRACTIVE INDEX(ND)= 1.4290 SURFACE TENSION (DYNES/CM)

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATR CC/NOLE 뿔

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .034 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.75-03 CENTIPOISE VAPOR MAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

-20.0 DEGREES C. ¥ 1245 END OF COMPOUND EA

PAGE NUMBER 8-

Appendix B

ZHURN. FIZ KHIM. 37. 201(1963)

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: TCR36 O DEGREES CENTICRADE BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ***** FORMULA WEIGHT: SUNTIARY OF PROPERTIES OF EA ****

.00089 *TEMP.(C.) DETERMINED OVER REFERENCE: TCR36 REFERENCE: TCR36 1.0852 -VAPOR PRESSURE(TORR)= .30-01 AT 30.0 DEG. CENT. REFERENCY VAPOR PRESSURE(TORR)= .65-01 AT 50.0 DEG. CENT. REFERENCY DENSITY(G/ML)= 1.0852 MAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 10.0 TO THE TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** REFERENCE: TCR36

DETERMINED OVER THE 219.3 -2.38600, B= -711.47, C= 50.0 DEG. CENT. REFERENCE: TCR36 P.9 FOLLOWING ANTOINE CONSTANTS(EATR 4491): Am TEMPERATURE RANGE 10.0 TO 50.0 DE Were used to calculaté the viscosity Viscosify(centistores)= 7.2 TEMPERATURE RANGE

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 21.8 DEG. CENT 34.2 AT 21.8 DE 23.0 DEG. CENT. SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.4290 AT

FILLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATE. 30.10 CC/MOLE VOLUME 524.18 DENSITY TEMPERATURE . 3361 SW/CC ፗ

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PNY.CHEM,48,23(1944) VISCOSITY OF VAPOR . 5.20-03 CENTIPOISE

PAGE NUMBER 8- 99

END OF COMPOUND EA 1245 AT

T .0 DEGREES C.

Appendix B

UNCLASSIFIED

37.

ZHURN. FIZ KHIW.

SUMMARY OF PRUPERTY:

C. WON HAME:

PORMULA WEIGHT: 176.2

GENERAL REFERENCE: LLNGE MAY NOT

** WARNING: SINCE THERE : N. FLTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELGW DATA RANGE MAY NOT

BE VALID UNICES LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

.00089 +TEMP.(C.) DETERMINED OVER TORR)* .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 1.0674 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0852 - RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 VAPOR PRESSURE(TORR) . PRESSURE (TORR) = DENSITY (G/ML) = VAPOR

DETERMINED OVER 219.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.38600, B= -711.47, C= ERATURE RANGE 16.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.9 THE TEMPERATURE RANGE TEMPERATURE RANGE

WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

REFERENCE: TCR36 21.8 DEG. CENT. 34.2 AT 21.8 D SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.4290 AT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV DENSITY TEMPERATURE VOLUME PRESSURE ATM. 30.10 CC/ROLE DEG C 463.19 . 3361 GH/CC HCI NCI

IVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.65-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN ABOVE CRITICAL STHE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1245

20.0 DEGREES C. AT

PAGE NUMBER B-100

ZHURN. FIZ KHIM. 37. 201(1963)

MARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00089 +TEMP. (C.) DETERMINED OVER **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOULS TO SPECIFIED TEMPERATURE **** 25.0 DEGREES CENTIGRADE REFERENCE: TCR36 REFERENCE: TCR36 1.0852 -REFERENCE: TCR36 VAPOR PRESSURE(TORR)= .30-01 AT 30.0 DEG. CENT. REFERENC VAPOR PRESSURE(TORR)= .65-01 AT 50.0 DEG. CENT. REFERENC DENSITY(G/ML)= 1.0630 WAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 1245 SUMMARY OF PROPERTIES OF EA 10.0 10 THE TEMPERATURE KANGE

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.38600, B= -711.47, C= 219.3 TEMPERATURE PANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.9 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CFNTISTOKES)=

REFERENCE: TCR38 14.2 AT 21.8 DEG. CENT. 23.0 DEG. CENT. 34.2 AT REFRACTIVE INDEX(ND) = 1.4290 AT SURFACE TENSION (DYNES/CM) =

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. CC/MOLE . 3361 GN/CC 표

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS Eq., J. PHY.CHEM.48,23(1944) .049 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR - 5.76-03 CENTIPOISE 25.0 DEGREES C. 7 1245 END OF COMPOUND EA

PAGE NUMBER B-101

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

DATA TO ESTIMATE **** WARNING: SINCE THERE IS NO MELTING FOINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****

***** WARRING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTA

A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND WOT MEANINGFUL 40.0 DEGREES CENTIGRADE VAPOR PRESSURE(TORR) = .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36 VAPOR PRESSURE(TORR) = .65-01 AT 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.0496 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0852 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 SUMMARY OF PROPERTIES OF EA

された。

DETERMINED OVER THE 219.3 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.38600, B= -711.47, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 p.9 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 2.280

.00089 *TEMP.(C.) DETERMINED OVER

REFERENCE: TCR36 34.2 AT 21.8 DEG. CENT. 23.0 DEG. CENT. SURFACE FENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.4290 AT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE DENSITY TEMPERATURE VOLUME

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR CC/MOLE 524.18 0EG C 463.19 DIFFUSION COEF. G4/CC 3361

.055

ABOVE CRITICAL PROPERTIES AND THE VISCUSITY OF VAPOR # 6.10-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

40.0 DEGREES C. ¥ END OF COMPOUND EA 1245

PAGE NUMBER B-102

Appendix B

Ŧ **UNCLASSIFIED**

ZHURN. FIZ KHIM. 37. 201(1963)

RAING: SINCE THERE IS NO WELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNIESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ***** DETERMINED OVER THE ESITMATED BUILING POINT(CENT.) = 208.5 HEAT OF VAPORIZATION(KILDCALORIES/MOLE) = 13.2 VOLATILITY(MG/METER CUBED) = .32+02 VOLATILITY(MILLIMOLE/ METER CUBED) = .20+00 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** -20.0 DEGREES CENTIGRADE 8.90720, Br 2890.40, Cr 273.2 REFERENCE: ARCSL-TR-77001 1246 WERE USED TO CALCULATE THE FOLIOWING FOUR PROPERTIES: SUMMARY OF PROPERTIES OF EA THE FULLOWING ANTOINE CONSTANTS (EATR 4491): Ax 28.9 DEG. CENT. .31-02 VAPOR PRESSURE (TORR) = **** WARNING: SINCE (EMPERATURE RANGE

REFERENCE: ARCSL-TR-77001 1.1924 WAS CALCULATED FROM THE EQUATION: RANGE 25.0 TO 45.0 DEG. CENT. REF THE TEMPERATURE RANGE DEMSITY (G/ML) =

* **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA T'HPERATURE RANGE ****

DETERMINED OVER THE 273.2 -2.22760, 8= -799.87, L THE FULLOWING ANTUINE CONSTANTS(EATR 4491): As -2.22760, Bs -799.87, (
TEMPLRATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY 8.552 VISCOSITY (CENTISTOKES).

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. 32.61 CC/MOLE 450.22 VOLUME DENSITY TEMPERATURE DEG C 412.01 .3689 32/E5 Ŧ

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.36-03 CENTIPOISE VAPOR MAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1246 AT -20.0 DEGREES C.

PAGE NUMBER 8-104

Appendix B

UNCLASSIFIED

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOULS TO SPECIFIED TEMPERATURE ***** 8.90720, B= 2890.40, C= 273.2 DETERMINED OVER THE -40.0 DEGREES CENTIGRADE REFERENCE: ARCSL-18-77001 AT 1246 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TOWR)* .32-03 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= SUMMARY OF PROPERTIES OF EA 28.0 DEG. CENT. ESTIMATED BOILING POINT(CENT.)= 206.5 HEAT OF V4" (IZATION(KILOCALORIES/MOLE)= VOLATILITY(AG/METER CUBED)= .37+01 0.00 TEMPERATURE RANGE

REFERENCE: ARCSL-TR-77001 DENSITY(G/ML) = 1.2134 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1714 -- THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77

**** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA JEMPERATURE RANGE ****

13,2

VOLATILITY(MILLIMOLE, METER CUBED)*

. 22-01

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 273.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.22760, 8= -799.87, C= 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 TEMPERATURE RANGE 25.0 TO 45.0 DE WERF USED TO CALCULATE THE VISCOSITY

15.963 VISCOSITY(CENTISTOKES)=

*.*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE 32.61 DENSITY TEMPERATURE VOLUME 450.22 412.01 3689 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION CCEF.

VISCOSITY OF VAPOR # 4.86-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.86-03

-40.0 DEGREES C. 7 1246 END OF COMPOUND EA

PAGE NUMBER B-103

Appendix B

\SSIFIED

201 (1963)

37.

ZHURN. FIZ KHIM.

.00105 *TEMP.(C.) DETERMINED OVER COMMON NAME: FORMULA WEIGHT: 166.1
GENERAL REFERENCE: ARCSL-TR-77001
BE VALUE SHUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** DETERMINED OVER THE .12+01 . O DEGREES CENTIGRADE 273.2 VOLATILITY(MG/METER CUBED)* .21+03 VOLATILITY(MILLIMOLE/ METER CUBED)* OENSITY(G/ML)* 1.1714 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.1714 --8.90720, B= 2890.40, C= REFERENCE: APUSL-TR-77001 1246 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)* .21-01 45.0 DEG. CENT. 13.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= SUNIARY OF PROPERTIES OF EA .0 TO 28.0 DEG. CENT. HEAT OF VAPORIZATION(MILDCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .21+03 ESTIMATED BOILING POINT (CENT.)= 25.0 10 THE TEMPERATURE RANGE TEMPERATURE RANGE WARNING:

* .* ** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: ARCSL-TR-77001

DETERMINED OVER THE 273.2 FOLLOWING AMTOINE CONSTANTS(EATR 4491): A# -2.22760, B= -799.87, C# PERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL=TR-77001 5.020 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) = 5.1 TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. 32.61 CC/KOLE VOLUME 450.22 DENSITY TEMPERATURE DEG C 412.01 03/63 ::689 THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .045 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.87-03 VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

.0 DEGREES ۲ 1246 END OF COMPOUND FA

ပ

PAGE NUMBER 8-105

Appendix B

ASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

.00105 *TEMP.(C.) DETERMINED OVER 20.0 DEGREES CENTIGRADE VOLATE: IT: (MC/METER CUBED)= .10+04 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.1504 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1714 - .0 THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 1246 SUMMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= ESTIMATED BOILING POINT (CENT.) . . 11+00 VAPOR PRESSURE(TO:R)=

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -2.22760, 8= -799.87, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY 3.169

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE

273.2

THE DATA TEMPERATURE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE RETHOD OF FILIPPOV. PRESSURE ATM. DENSITY TEMPERATURE VOLUME GIA/CC DEG C. CC/MOLE 3699 THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .053 DIFFUSION COEF.

32.61

450.22

412.01

VISCOSITY OF VAPOR * 6.37-03 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) TE

PAGE NUMBER B-106

20.0 DEGREES C.

AT

1246

END OF COMPOUND EA

Appendix B

ASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

CALCULATION OF VALUES BELOW DATA RANGE MAY NOT DETERMINED OVER THE 25.0 DEGREES CENTIGRADE 273.2 8.90720. B= VALID UNIESS LIQUID SUPERCOCLS TO SPECIFIED SINCE THERE IS NO MELTING POINT FOR THIS

CONTRACTOR SERVICES

137.KK

REFERENCE: ARCSL-:R-77001 HE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. 28.0 DEG. CENT. TEMPERATURE RANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

.00105 +TEMP.(C.) DETERMINED OVER CUBED)* VOLATILITY (MILLIMOLE / METER HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = VOLATHITY OF VAPORIZATION (KILOCALORIES/MOLE) = VOLATHITY OF VALORIES AND VOLATHITY OF VALORIES AND VOLATHITY OF VALORIES AND VALOR

REFERENCE: ARCSL-TR-77001 1.1452 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.1714 - RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77 THE TEMPERATURE RANGE DETERMINED OVER THE

273.2

S(EATR 4491): A* -2.22760, B= -799.87, C* 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 25.0 TO THE FOLLOWING ANT(TEMPERATURE RANGE

FOLLOWING ANTOINE CONSTANTS(EATR 4491):

FOLLOWING CRITICAL PROPURITES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE THE

CC/MOLE 450.22 VOLUME DENSITY TEMPERATURE 3689 CM.SO./SEC CALCULATED FOR VAPOR IN AIR .055 COEF. DIFFUSION

CENTIPOISE THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.49-03 (

25.0 DEGREES C. ¥ END OF COMPOUND EA 1246

NUMBER

PAGE

Appendix B

ASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIGUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.90720, B* 2890.40, C* 273.2 DETERMINED OVER THE

TEMPERATURE RANGE .0 TO 28.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PAESSURE(TORR)* .48+00 GENERAL REFERENCE: ARCSL-TR-77001 COLATILITY(MG/METER CUBED)= .40+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .24+02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 166.1 1246 SUMMARY OF PROPERTIES OF EA VAPOR PAESSURE(TORR)= .48+00 ESTIMATED BOILING POINT(CENT.)= 206.5 HEAT OF VAPOKIZATION(KILOCALDRIES/MOLE)= COMMON NAME: VOLATILITY(MG/METER CUBED)=

アンプラファングング

REFERENCE: ARCSL-TP-77001 DETERMINED OVER THE DENSITY(G/ML)= 1.1294 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1714 - THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77 273.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.22760, B= -799.87, C* TEMPEMATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. 32.61 CC/MULE 450.22 412.01 .3689 22/119 THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCUSITY OF VAPOR = 6.87-03 CENTIPOISE THE VISCOSIIY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) PAGE NUMBER D-108

ပ

40.0 DEGREES

-

1246

END OF COMPOUND EA

Appendix B

UNCLASSIFIED

GENERAL REFERENCE: TCR36
THEREFORE THE LIQUID PROPERTIES ARE COMMON NAME:

+**** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE SOLID *****

.00107 +TEMP.(C.) DETERMINED OVER .74+00 AT 25.0 DEG. CENT, PEFERENCE: TCR36 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0899 -- 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.1327 THE TEMPERATURE RANGE VAPUR PRESSURE(TORR)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TCR36 24.4 AT 20.4 DEG. CENT. 23.0 DEG. CENT. -34.70 REFERENCE: TCR36 ¥ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3890 FREEZING POINT (DEG. CENT.) =

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE

GA/CC DEG C CC/MOLE ATM.

.3497 364.16 440.78 30.99 뿚

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .032 DIFFUSION COEF.

IVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.00-03 CENTIPOISE ABOVE CRITICAL THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) PAGE NUMBER B-109

-40.0 DEGREES C.

¥

END OF COMPOUND EA 1249

GENERAL REFERENCE: TCR36 -20.0 DEGREES CENTIGRADE 154.1 FORMULA WEIGHT: 7 1249 SUMBARY OF PROPERTIES OF EA COMMON NAME:

シントインと

**** WARNING: STYCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00107 +TEMP.(C.) DETERMINED OVER TOWR:= .74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 1:1113 WAS CALCULATED FROM THE EQUATION: DENSITY 1.0899 - RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.1113 THE TEMPERATURE RANGE VAPOR PRESSURE(TORRI=

*.*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: TCA36 REFERENCE: TCR36 24.4 AT 20.4 DEG. CENT. 23.0 DEG. CENT. -34.70 REFERENCE: ICR36 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3890 AT FREEZING POINT (DEG. CENT.)*

ZHURN. FIZ KHIM. 37. 201 (1963) FILLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. PRESSURE JHE

DENSITY TEMPERATURE VOLUME
CM, CC DEG C CC/MOLE
3497 364.16 440.78

CM.SQ./SEC CALCULATED FOR VAPOR IN ATR DIFFUSION COEF.

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.50-03 CENTIPDISE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

-20.0 DEGREES C.

Ą

END OF COMPOUND EA 1249

PAGE NUMBER B-110

GENERAL REFERENCE: TCR36 .0 DEGREES CENTIGRADE 154.1 GEN FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE CATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL BOILING POINT DATA FOR

.00107, *TEMP.(C.) DETERMINED OVER .74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36
MAS CALCULATED FROM THE EQUATION: DENSITY: 1.0899 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY (G/ML)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** TEMPERATURE RANGE

REFERENCE: TCR36 24.4 AT 20.4 DEG. CENT. 23.0 DEG. CENT. -34.70 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3890 FREEZING POINT (DEG. CENT.) =

FOLLDWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE AIM.

3497 364.16 440.78 30.99 뿔

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF. THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 6.01-03

.O DEGREES C. 4 1249 END OF COMPOUND EA

PAGE NUMBER

CENT I POI SE

Appendix B

ASSIFIED

GENERAL REFERENCE: TCR36 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: SUNDARY OF PROPERTIES OF EA 1249 AT COMMON NAME: ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00107 +TEMP.(C.) DETERMINED OVER VAFOR PRESSURE(TORR)* .74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(C/ML)= 1.0586 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0899 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

REFERENCE: TCR36 24.4 AT 20.4 DEG. CENT. 23.0 DEG. CENT. -34.70 REFERENCE: TCR36 SURFACE FENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3890 AT FREEZING POINT (DEG. CENT.) = ZHURN. F12 KHIM. 37. 201 (1963) 1 HE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 3497 364.16 440.78 30.99

UIFFUSION COEF. = .054 CM.SQ./SEC CALCULATED FOR VARUE

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 6.52-03 CENTIPOISE WOODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) AT 20.0 DEGREES C. PAGE

PAGE NUMBER B-112

ASSIFIED 140

PAGE NUMBER 8-113

GENERAL REFERENCE: TCR36 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: ¥ 1249 SUNHARY OF PROPERTIES OF EA **** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00107 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TURR)= .74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DUNSITY(C/ML)= 1.0632 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0899 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

REFERENCE: TCR36 REFERENCE: TCR36 24.4 AT 20.4 DEG. CENT. 23.0 DEG. CENT. -34.70 REFERENCE: TCR36 SURFACE TENSION (DYNES/CM) **
REFRACTIVE INDEX(ND)* 1.3890 AT
FREEZING POINT (DEG. CENT.)* FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE WETHOD OF FILIPPOV.
DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/NOLE ATM.
.3497 364.16 440.78 30.99 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR TE TE

VVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR . 6.64-03 CENTIPOISE THE VISCOSITY OF THE VAPOR'WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23 (1944) VISCOSITY OF .050 DIFFUSION COEF. =

ERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 6.64 End of compound ea 1249 at 25.0 degrees C.

UNCLASSIFIED

GENERAL REFERENCE: TCR36 40.0 DEGREES CENTIGRADE 154.1 FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ****

.00107 .TEMP.(C.) DETERMINED DVER TORRIA .74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 1.0472 WAS CALCULATED FROM THE EQUATION: DENSITY 1.0899 - RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 WAPOR PRESSURE(TORRIA DENSITY(G/FL)=

REFERENCE: TCR36 THE TEMPER TURE RANGE

4 AT 20.4 DEG. CENT. 3.0 DEG. CENT. -34.70 REFERFMCE. TOTAL DEX(ND) = 1.3890 AT SURFACE TEN FON (DYNES/CM) = REFRACTIVE DEX(ND)= 1.3890 FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201 (1963) ICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ATURE VOLUME PRESSURE 30.99 CC/MOLE E. ATURE 360.16 FOLTOWING : ENSITY TE. SM/CC E. u. 7.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .062 DIFFUSION CREF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 7.02-03 CENTIPDISE THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING THE KODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

40.0 DEGREES C.

۲

END OF COMPOUND EA 1249

PAGE NUMBER B-114

GENERAL REFERENCE! JACS 82 THEREFORE THE LIQUID PROPERTIES ARE -40.0 DEGREES HT: 100.0 THE REQUESTED TEMPERATURE IS DELOW THE MELTING POINT.
SUPECDGLED LIQUID AND NOT THE SOLID **** SUMMARY **** WARNING VALID ONLY FOR

DETERMINED OVER THE 238.6 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.54440, B= 1577.80, C= 23 Perature range 19.0 to 99.0 deg. ce⁷ 1. Reference¹ Jacs 82 3843 1980 TEMPERATURE RANGE

MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VOLATILITY(MG/METER CUBED). .27+04 VOLATILITY(MILLIMOLE/ METER CUBED). .27+02 HEAT OF VAPORIZATION (KILGCALORIES/MOLE). VAPOR PRESSURE(TORR) = .40+00 ESTIMATED BOILING POINT(CENT.) =

M: DENSITY» 1.4060 - .00186 «TEMP.(C.) DETERMINED OVER Reference: JACS 82 3843 1960 DENSITY(G/ML) = 1.4806 WAS CALCULATED FROM THF EQUATION: THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REF DENSITY (G/ML) =

OF THE DATA TEMPERATURE RANGE **** **** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.41890, B= -230.77, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1980 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY

2.171 VISCOSITY (CENTISTOKES)-

OF THE DATA TEMPERATURE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

CENT. REFERENCE: U RSCH NBS P+C V60A 1964 P367 U RSCH NBS P+C V60A 1964 P367 REFERENCE: UACS 82 3843 1960 3843 1960 REFERENCE: JACS 82 -36.9 DEGREE CENT. 6 REFERENCE: J RSC 7.340 REFER AT 25.0 DEG. CENT. 2.84 AT -36.9 DEGRE -36.86 HEAT OF FUSION(KCAL/MOLE) = 2.84 AT FREEZING POINT (DEG. CENT.) = -36.86 MELTING POINT DEPRESSION(DEG. C./MOLE) = 1.3148 REFRACTIVE INDEX(ND)=

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME CC/MOLE DENSITY TEMPERATURE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .054 DIFFUSION COEF. .4846

CM/CC

VISCOSITY OF VAPOR = 7.77-03 CENTIPOISE REFERENCE: JACS 82 3843 1960 THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.77-03 REFERENCE: NB9253 P. 4 3.4 AT AMBIENT TEMPERATURE 45.4 AT AMBIENT TEMPERATURE DIPOLE MOMENT (DEBYES) = OXYGEN INDEX (UNITLESS) =

-40.0 DEGREES ¥ 1251 OF COMPOUND EA

GENERAL REFERENCE: JACS 82 1960 3843 1 1251 AT -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 100.0 5 SUMMARY OF PROPERTIES OF COMMON NAME: OF

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.54440, 8= 4577.80, C= 239. TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960. WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

. 2 + 0 -VAPOR PRESSURE(TORR).

ESTIMATED BOILING POINT(CENT.) = 99.7 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 9.7 VOLATILITY(MG/METER CUBED) = .13+05 VOLATILITY(MILLIMOLE/ METER CUBED) = .13+03 ***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

.00166 -TEMP.(C.) DETERMINED OVER REFERENCE: JACS 82 3843 1960 DENSITY= 1.4433 WAS CALCULATED FROM THE EQUATION: RANGE 25.0 TO 50.0 DEG. CENT. REI THE TEMPERATURE RANGE DENSI TY (G/ML) =

**** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.41890, B= -230.77, C= 171.4 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 WERE USED TO CALCULATE THE VISCOSITY

1.273 VISCOSITY (CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE ***** WARNING: THE ABOYE VALUES ARE EXTRAPOLATED OUT AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 2.84 AT -36.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367 -36.86 REFERENCE: J RSCH NBS P+C V68A 1964 P367 C./MOLE)= 2.340 REFERENCE: JACS 82 3843 1960 HEAT OF FUSION(KCAL/MOLE)= FREEZING POINT (DEG. CENT.)= MELTING POINT DEPRESSION(DEG. 1.3148 REFRACTIVE INDEX(ND)=

ZHURN. FIZ KHIM. 37. 201(1963) Į

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. DEG C 233.60

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .065 DIFFUSION COEF. .

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 8.52-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE PEFERENCE: JACS 82 3843 1960 OXYGEN INDEX(UNITLESS)= 45.4 AT AMBIENT TEMPERATURE

ပံ VENTO DEGREES 1251 AT END OF COMPOUND EA

PAGE NUMBER 8-116

Appendix B

SSIFIED 144

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: JACS 82 1960 3843 .0 DEGREES CENTIGRADE 100.0 EA 1251 AT FORMULA WEIGHT: ö SUMMARY OF PROPERTIES COMMON NAME:

DETERMINED OVER 238.6

ESTIMATED BOILLING POINT(CENT.)= 99.7
HEAT OF VAPORIZATION(KLOCALORIES/MOLE)= 9.5
VOLATILITY(MG/METER CUBED)= .50+05 VOLATILITY(MILLIMOLE/ METER CUBED)= .50+03
***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

*TEMP. (C.) DETERMINED OVER .00188 REFERENCE: JACS 82 3843 1960 1.4060 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.4050 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 384 THE TEMPERATURE RANGE DENST TY (G/ML) =

OF THE DATA TEMPERATURE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER 171.4 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -1.41890, B. -230.77, C. TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82,3843 1960 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) - .846 UNCL

**** THE DATA TEMPERATURE RANGE 6 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1980 2.84 AT -36.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367 -36.86 REFERENCE: J RSCH NBS P+C V68A 1964 P367 C./WOLE)= 2.340 REFERENCE: JACS 82 3843 1960 HEAT OF FUSION(KCAL/MOLE) = 2.84 AT - FREEZING POINT (DEG. CENT.) = -36.86 MELTING POINT DEPRESSION(DEG. C./MOLE) = 4 REFRACTIVE INDEX(ND)= 1.3148

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. . 4846 233.60 206.36 52.62 H H SSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .077 DIFFUSION COEF. .

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 9.27-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 3843 1960 DXYGEN INDEX(UNITLESS)= 45.4 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P. 4

.0 DEGREES AT 1251 END OF COMPOUND EA

PAGE MUMBER

ZHURM. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: JACS 82 1960 3843 20.0 DEGREES CENTIGRADE 1251 AT 20.0 DEGRE FORMULA WEIGHT: 100.0 2 PROPERTIES OF KON NAME: DF COMMON NAME: 0 SCHRARY

DETERMINED OVER THE 7.54440, B= 1577.80, C= 238.6 REFERENCE: JACS 82 3843 1960 FOLLOWING ANTOINE CONSTANTS(EATR 4491): Amerature range 19.0 to 99.0 DEG. CENT. THE FOLLOWING ANTOI TEMPERATURE RANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

.28+02 VAPOR PRESSURE(TURR) =

HEAT OF VAPORIZATION (KILDCALORIES/MOLE) *

.00186 *TEMP.(C.) DETERMINED DVER .15+04 REFERENCE: JACS 82 3843 1960 VOLATILITY(MILLIMOLE/ METER CUBED)= 1.4060 -VOLATILITY(MG/METER CUBED)* .15+06 VOLATILITY(MILLIMOLE/ METE DENSITY(G/ML)= 1.3687 WAS CALCULATED FROM THE EQUATION: DENSITY* 50.0 DEG. CENT. 25.0 TO THE TEMPERATURE RANGE

RANGE OF THE DATA TEMPERATURE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT DETERMINED OVER THE 171.4 TS(EATR 4491): As -1.41890, Bs -230.77, Cs 50.0 DEG. CENT. REFERENCE: JACS 82,3843 1960 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= TEMPERATURE RANGE 25.0 TO 50.0 DI Were used to calculate the viscosity

.612 VISCOSITY (CENTISTUKES)*

**** OF THE DATA TEMPERATURE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
2.84 AT -36.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
~36.86 REFERENCE: J RSCH NBS P+C V68A 1964 P367
C./MOLE) = 2.340 REFERENCE: JACS 82 3843 1960 1.3148 AT HEAT OF FUSION (KCAL/MOLE) . REFRACTIVE INDEX(ND)=

FREEZING POINT (DEG. CENT.) = MELTING POINT DEPRESSION(DEG.

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/MOLE VOLUME DENSITY TEMPERATURE DEG C 233.60 GM/CC . 4846

CK.SQ./SEC CALCULATED FOR VAPOR IN AIR 060. DIFFUSION COEF.

206.36

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 1.00-02 CENTIPOISE DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 3843 1960 OXYGEN INDEX(UNITLESS)= 45.4 AT AMBIENT TEMPERATURE REFERENCE: N89253 P. 4

20.0 DEGREES AT 1251 OF COMPOUND EA

PAGE NUMBER B-118

JAC\$ 82 1960 DETERMINED OVER THE GENERAL REFERENCES 25.0 DEGREES CENTIGRADE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.54440, B= 1577.80, C= 238.6 TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 WERE USED TO CALCULATE THE FOLLCHING FOUR PROPERTIES: 1 1251 AT 25. FORMULA WEIGHT: 5 55 SUMMARY OF PROPERTIES COMMON NAME: .36+02 VAPOR PRESSURE(TORR)=

.19+04 .00186 *TEMP.(C.) DETERBINED GVER VOLATILITY(MG/METER CUBED)= .19+06 VOLATILITY(MILLIMOLE/ METER CUBED)= .19
DENSITY(G/ML)= 1.3594 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4060 - .00184
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 9.5 ESTIMATED BOILING POINT(CENT.)= 99.7 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)=

DETERMINED OVER THE 171.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.41890, B= -230.77, C= Perature range 25.0 to 50.0 deg. Cent. Reference:Jacs 82,3843 1960 .570 THE FOLLOWING ANIONAL TO 50.0 DE TEMPERATURE RANGE 25.0 TO 50.0 DE MERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)*

NBS P+C V68A 1964 P367 P367 3843 1960 AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 2.84 AT -36.9 DEGREE CENT. REFERENCE: J RSCH NBS -36.86 REFERENCE: J RSCH NBS P+C V68A 1964 P361 C./MDLE) = 2.340 REFERENCE: JACS 82 3843 1960 REFRACTIVE INDEX(ND)= 1.3140 AT 25.0 HEAT OF FUSION(KCAL/MOLE)= 2.84 AI -FREEZING POINT (DEG. CENT.)= -36.86 MELTING POINT DEPRESSION(DEG. C./MOLE)=

ZHURN. F12 KHIM. 37. 201(1963) THE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 233.60 4846

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 160. DIFFUSION COEF. =

VISCOSITY OF VAPOR = 1.02-02 CENTIPOISE JRE REFERENCE: JACS 82 3843 1960 FURE REFERENCE: NB9253 P. 4 OVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE TOVE (MCDIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSIFIED SUTHERNORENT TEMPERATURE OXYGEN INDEX(UNITLESS)= 45.4 AT AMBIENT TEMPERATURE

25.0 DEGREES ¥ 1251 END OF COMPOUND EA

15

MUMBER

PAGE

ASSIFIED UNCL

3 2 GENERAL NEFERENCE! JACS 40.0 DEGREES CENTICRADE 1 1251 AT 40. FORMULA WEIGHT: 5 56 SUMMARY OF PROPERTIES COMMON NAME:

DETERMINEC OVER THE TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

.39+04 .00186 *TEMP.(C.) DETERNINED OVER VAPOR PRESSURE(TORR)= .76402
ESTIMATED BOILING POINT(CENT.)= 99.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 9.1
VOLATILITY(MG/METEN CUBED)= .33+08 VOLATILITY(MILLIMOLE/ METER CUBED)= .38
DENSITY(G/ML)= 1.3314 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4060 - .00180
THE TEMPERATURE RANGE 25.0 TG 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

DETERMINED OVER THE 171.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A# -1.41890, B# -230.77, C# PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 THE FOLLOWING ANTOINE CONSTANTS(EATR TEMPERATURE RANGE 25.0 TO 50.0 DE MERE USED TO CALCULATE THE VISCOSITY

.470 VISCOSITY (CENTISTOKES)=

NBS P+C V68A 1964 P367 3843 1960 AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 2.84 AT -38.9 DEGREE CENT. REFERENCE: J RSCH NBS F -38.46 REFERENCE: J RSCH NBS P+C V68A 1964 P367 C./MOLE) = 2.340 REFERENCE: JACS 82 3843 1960 REFRACTIVE INDEX(ND)= 1.3148
HEAT OF FUSION(KCAL/MOLE)=
FREEZING POINT (DEG. CENT.)=

MELTING POINT DEPRESSION(DEG. C./MOLE)=

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 7.E

GM/CC DEG C CL/MULL

-4846 233.60 206.36 52.62

-104 - 104 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

DIFFUSION COEF. - .104 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR - 1.07-02 CENTIPOISE

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR - 1.07-02 CENTIPOISE

DIPOLE MOMENT (DEBYES) - 3.4 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P. 4

PAG

PAGE NUMBER B-120

Appendix B

ZHURN. F12 KHIM. 37. 201(1963)

UNCLASSIFIED

COMMON NAME: DICL FORMULA WEIGHT: 132.9 GENERAL REFERENCE: JACS 82 1960 3843 CH3P(0)CL2 INC NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES CH3P(0)CL2 ESTIMATED FOR LIQUIOS AND VAPOKS ARE PROVIDED AT THE MELTING PCINT OR FREEZING POINT. **** AT THE MELTING POINT IN LIEU OF -40 DEG SUMMARY OF PROPERTIES OF EA

7.24420, 8* 1669.70, C* 216.1 DETERMINED OVER THE REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.24
TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFER
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .35+01

HEAT OF VAPORIZATION(KILGCALORIES/MOLE)= 11.5 VOLATILITY(MG/METER CUBED)= .24+05 VOLATILITY(MILLIMOLE/ METER CUBED)= .18+03 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** ESTIMATED BOILING POINT(CENT.)= 166.6 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .24+05

IN: DENSITY: 1.4906 - .00138 STEMP.(C.) DETERMINED OVER REFERENCE: JACS 82 3843 1960 1.4450 WAS CALCULATED FROM THE EQUATION: DENSITY# 50.0 DEG. CENT. 25.0 To THE TEMPERATURE RANGE DENSITY (G/ML) =

DETERMINED OVER 84.8 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -.79780, B. -103.26, C. TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)=

35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843
AT 32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
32.95 REFERENCE: J RSCH NBS P+C V68A 1964 P367
DLE) = 3.440 REFERENCE: JACS 82 1960 3843 4.32 AT MELTING POINT DEPRESSION(DEG. C./MOLE) = REFRACTIVE INDEX(ND)= 1.4569 AT HEAT OF FUSION(KCAL/MOLE)= 4.5 FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/NOLE DENSITY TEMPERATURE VOLUME ASSIFIED

GM/CC . 4728

CM.SQ./SEC CALCULATED FOR VAPUR IN AIR .080 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 8.34-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

32.9 DEGREES C. ¥ 1253 END OF COMPOUND EA

PAGE NUMBER B-121

ZHURN. FIZ KHIM. 37. 201 (1963)

COMMON NAME: DICL FORMULA WEIGHT: 132.9 GENERAL REFERENCE: JACS B2 1960 3843 CH3P(0)CL2 PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. **** 7.24420; 8= 1669.70, C= 216.1 DETERMINED OVER THE REFERENCE: JACS 82 3843 1960 VOLATILITY(MG/METER CUBED)= .24+05 YOLATILITY(MILLIMOLE/ METER CUBED)= .18+03 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** AT THE MELITING POINT IN LIEU OF TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)* .35+01 _ .s THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A* SUMMARY OF PROPERTIES OF EA ESTIMATED BOILING POINT(CENT.) = 166.6 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .24+05

M. DENSITY 1.4906 - .00138 *TEMP.(C.) DETERMINED OVER REFERENCE: JACS 82 3843 1960 1.4450 WAS CALCULATED FROM THE EQUATION: DENSITY* RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: J THE TEMPERATURE RANGE DENSITY (G/ML) =

DETERMINED OVER THE 84. E THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -.79780, Bs -103.28, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) = 1.201

UNCL

DEG. CENT. REFERENCE: JACS 82 1960 3843
32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
REFERENCE: J RSCH NBS P+C V68A 1964 P367
3.440 REFERENCE: JACS 82 1960 3843 AT 35.0 DEG. CENT. 4.32 AT 32.9 DEGRE 32.95 REFRACTIVE INDEX(ND)= 1.4569 AT 35.0 HEAT OF FUSION(KCAL/MOLE)= 4.32 AT FREEZING POINT (DEG. CENT.)= 32.95 MELTING POINT DEPRESSION(DEG. C./MOLE)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM 50.78 CC/MOLE DENSITY TEMPERATURE VOLUME 392.88 SM/CC 4728 ASSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .080 DIFFUSION COEF.

CENT 1 PO 1 SE VISCOSITY OF VAPOR = 8.34-03 CEN DRE REFERENCE: JACS 82 1960 3843 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 8.34-03 (3.4 AT AMBIENT TEMPERATURE DIPOLE MOMENT (DEBYES)=

32.9 DEGREES ¥ 1253 END OF COMPOUND EA

PAGE NUMBER B-122

ZHURH. FIZ KHIM. 37. 201(1963)

UACS 82 1960 3843 CH3P(0)CL2 PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. **** GENERAL REFERENCES AT THE MELTING POINT IN LIEU OF SUBMARY OF PROPERTIES OF

DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 7.24420, 8* 1669.70, C* 216.4 TEMPERATURE RANGE 39.0 TO :67.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .35+0!
ESTIMATED BOILING POINT(CENT.) = 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 11.5
VOLATILITY(MG/METER CUBED) = .24+05 VOLATILITY(MILLIMOLE/ METER CUBED) = +++++ WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DENSITY(G/ML)= 1.4450 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4906 - .00138 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1980

RANGE ****

DETERMINED OVER 84.8 THE FCLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79780, B= -103.26, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES)=

DEG. CENT. REFERENCE: JACS 82 1960 3843
32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
REFERENCE: J RSCH NBS P+C V68A 1964 P367
3.440 REFERENCE: JACS 82 1960 3843 AT 35.0 DEG. CENT. 4.32 AT 32.9 DEGREI 32.95 REFERENCI C./MOLE)= HEAT OF FUSION(KCAL/MOLE) = FREEZING POINT (DEG. CENT.) = MELTING POINT DEPRESSION(DEG. REFRACTIVE INDEX(ND)= 1.4569

WERE ESTIMATED USING THE METHOD OF FILIPPOV. FOLLOWING CRITICAL PROPERTIES DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 쒿

ATM.

392.88

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 080 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 8.34-03 CENTIPDISE DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 62 1960 3843

32.9 DEGREES ۲ 1253 END OF COMPOUND EA

NUMBER B-123

PAGE

Appendix B

UNCLASSIFIED

1960 3843 CH3P(0)CL2 GENERAL REFERENCE: JACS 82 THEREFORE THE LIQUID PROPERTIES ARE DETERMINED OVER THE SUMMARY OF PROPERTIES OF EA 1253 AT 20.0 DEGREES CENTIGRADE COMMON NAME: DICL FORMULA WEIGHT: 132.9 GEN **** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELLING POINT. THEREFORE TH PEFERENCE: JACS 82 3843 1960 RTIES: THE FOLLOWING ANTUINE CONSTANTS(EATP 4491): A. 7.24420, B. 1669.70, C. SUPECCOLED LIQUID AND NOT THE SOLID **** VALID ONLY FOR

MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .15+01
ESTIMATED BOILING POINT(CENT.)= 166.6
HEAT OF VAPORIZATION(KILOCALORIES-MOLE)= 11.8

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE VOLATILITY(MILLIMOLE/ METER CUBED)= .11+05 VOLATILITY(MG/METER CUBED)=

1.4629 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.4906 - .30138 *TEMP.(C.) DETERMINED OVER RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 THE TEMPERATURE RANGE DENSITY(G/ML)=

RANGE81+02

RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPCLATED OUT OF THE DATA TEMPERATURE DETERMINED OVER THE 84.8 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -.79780, 8. -103.26, C. PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 25.0 10 TEMPERATURE RANGE

1.541 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)* ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE +***

35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843 AT 32.9 DEGREE CENT, REFERENCE: J RSCH NBS P+C V68A 1964 P367 32.95 REFERENCE: J R3CH NBS P+C V68A 1964 P367 DLE) = 3.440 REFERENCE: JACS 82 1960 3843 32.95 FREEZING POINT (DEG. CENT.) = 32.95 MELTING POINT DEPRESSIGN(DEG. C./MOLE) = 4.32 AT Αĩ REFRACTIVE INDEX(ND)= 1.4569 HEAT OF FUSION (KCAL/MOLE) =

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME: PRESSURE ATM. 50.78 CC/MOLE SM/CC 갶

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .072 DIFFUSION COEF.

281.10

392.88

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.94-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

20.0 DEGREES 1253 AT END OF COMPOUND EA

PAGE NUMBER 8-124

Appendix E

GENERAL REFERENCE: JACS 82 1960 3843 CH3P(0)CL2 THEREFORE THE LIQUID PROPERTIES ARE 25.0 DEGREES CENTIGRADE 1253 SUMMARY OF PROPERTIES OF EA

**** MARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. VALID ONLY FOR SUPECDOLED LIQUID AND NOT THE SOLID *****

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.24420, B= 1669.70, C= 216.1 TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFERENCE: JACS 82 3843 1960 MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)= .21+01

ESTIMATED BOILING POINT(CENT.)= 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.7
VOLATILITY(MG/ME/ER CUBED)= .15+05 VOLATILITY(MILLIMOLE/ METER CUBED)= .11+03
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DENSITY(G/ML) = 1.4560 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.4906 - .00138 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

DETERMINED OVER THE 84.8 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79780, B= -103.26, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960

WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 1.3

AT 35.0 DEG. CENT, REFERENCE: JACS 82 1960 3843
4.32 AT 32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
32.95 REFERENCE: J RSCH NBS P+C V68A 1964 P367
C./WOLE) = 3.440 REFERENCE: JACS 82 1960 3843 REFRACTIVE INDEX(ND) = 1.4569 AT 35.0 HEAT OF FUSION(MCAL/MOLE) = 4.32 AT FTEEZING POINT (DEG. CENT.) = 32.95 MELTING POINT DEPRESSION(DEG. C./MOLE) = ZHURN. FIZ KHIM. 37. 201(1962) ፗ

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure GM/CC DEG C CC/MOLE ATM. 392.88

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .075 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE AGGVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS Eq., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR # 8.10-03 CENTIPOISE DIPOLE MOMENT(DEBYES)* 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

25.0 DEGREES C. ¥ 1253 END OF COMPOUND EA

PAGE NUMBER 3-125

GENERAL REFERENCE! JACS 82 1960 3843 CH3P(0)CL2 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 132.9 1253 SUMMARY OF PROPERTIES OF EA COMMON NAME: DICL

DETERMINED OVER THE 7.24420, 8= 1669.70, C= 216.1 REFERENCE: JACS 82 3843 1960 7.24420, B= TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFERENCE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .53+01
ESTIMATED BOILING POINT(CENT.) = 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 11.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A=

.00138 + FEMP. (C.) DETERMINED OVER VOLATILITY(MG/METER CUBED) = .36+05 VOLATILITY(MILLIMOLE/ METER CUBED) = DENSITY(G/ML) = 1.4352 MAS CALCULATED FROM THE EQUATION: DENSITY = 1.4906 THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3847

.27+03

DETERMINED OVER THE REFERENCE: JACS 82 3843 1960 84.8

TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960 1.071 VISCOSITY (CENTISTOKES)=

2.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964. P367 REFERENCE: J RSCH NBS P+C V68A 1964 P367 3.440 REFERENCE: JACS 82 1960 3843 REFERENCE: JACS 82 1960 3843 32.9 DEGREE CENT. AT 35.0 DEG. CENT. 4.32 AT 32.9 DEGRE FREEZING POINT (DEG. CENT.) = 32.95
MELTING POINT DEPRESSION(DEG. C./NOLE) = REFRACTIVE INDEX(ND)= 1.4569 AT HEAT OF FUSION(KCAL/MOLE)= 4.

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. Density temperature volume pressure

ATM. 50.78 CC/MOLE 392.88 SM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .083 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 8.56-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

PAGE NUMBER 8-128

40.0 DEGREES C.

A

1253

END OF COMPOUND EA

GENERAL REFERENCE: TCR36 1 1255 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 154.1 SUMMARY OF PROPERTIES OF COMMON NAME:

**** WARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00105 .TEMP. (C.) DETERMINED DVER VAPOR PRESSURE(TORR) = .12+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.1329 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 275.8 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.46410, B= -794.03, C= FEATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCRS6 P.11 THE FOLLOWING ANTOINE CONSTANTS(EATRITEMPERATURE RANGE 10.0 TO 50.0 DEWERL USED 10 CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES)=

22.2 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 C CATA TEMPERATURE RANGE OF THE * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT 24.2 AT -78.00 SURFACE TENSION (DYNES/CM) # FREEZING POIN! (DEG. CENT.)* ZHURN. FIZ KHIM. 37. 201(1963) ΉE

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/NOLE ATM. . 3486 374.19 442.21 31.37

THE VISCOSITY OF THE VAPOR WAS, ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR # 4.93-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF. *

-40.0 DEGREES C. ۲ 1255 END OF COMPOUND EA

PAGE NUMBER 8-127

Appendix B

機能によって

ASSI1 155

GENERAL REFERENCE: TCR36 . 1255 AT ~20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 154.1 E SUNTIARY OF PROPERTIES OF COMMON NAME: ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00105 *TEMP.(C.) DETERMINED OVER VAPOR PAESSURE(TORR) = .12+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.1119 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

* * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 275.8 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -2.46410, Bs -794.03, Cs TEMPERATURE RANGE 16.0 TO 50.0 DEG. CENT. REFERENCE:TCR5G P.11
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 4.362

*.*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DID NOT FREEZE TO -78 C CENT. TCR36 22.2 DEG. REFERENCE: 24.2 AT -78.00 SURFACE TENSION (DYNES/CM) * FREEZING POINT (DEG. CENT.)*

ZHURN. FIZ KHIM. 37. 201 (1963) THE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC. DEG C. CC/MOLE ATM. . 5486 374,19 442,21 31.37

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF. . THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

-20.0 DEGREES C. ٨ END OF COMPOUND EA 1255

PASE NUMBER 8-128

.0 DEGREES CENTIGRADE 154.1 GENERAL REFERENCE: TCR36 FORMULA WEIGHT: ¥ 1255 Ę SUMMARY OF PROPERTIES OF COMMON NAME:

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00105 +TEMP.(C.) DETERMINED OVER VAPOR PHESSIRE(TORR)= .12+01 AT 25.0 DEG. CENT, REFERENCE: TCR36 DENSITY(G/ML)= 1.0909 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0909 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 275.8 -794.03, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -2.48410, Bs -794, ERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR56 P.11 TEMPEGATURE RANGE 10.0 TO 50.0 DI WERE USED 10 CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

* * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 NOT FREEZE TO -78 C 22.2 DEG. CENT. REFERENCE: TCR36 DID 24.2 AT -78.00 SURFACE TENSION (DYNES/CM) *
FREEZING POINT (DEG. CENT.)*

ZHURN, FIZ KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV, DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. .3486 374.19 442.21 31.37 뽀

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .046 DIFFUSION COEF. ABDVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.94-03 CENTIPDISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEW.48,23(1944)

.O DEGREES ¥ 1255 END OF COMPOUND EA

PAGE NUMBER B-129

Appendix B

UNCLASSIFIED

157

GENERAL REFERENCE: TCR36 A 1255 AT 20.0 DEGREES CENTIGRADE FORMULA MEIGHT: 154.1 SUMMARY OF PROPERTIES OF EA

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00105 *TEMP.(C.) DETERMINED OVER VAPOR PHESSURE(TORR): .12+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML): 1.0599 WAS CALCULATED FROM THE EQUATION: DENSITY: 1.0909 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 275.8 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.46410, B= -794.03, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR56 P.11
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 1.660

22.2 DEG. CENT. REFERENCE: TCR38 REFERENCE: TCR36 DID NOT FREEZE TO -78 C 24.2 AT -78.00 SURFACE TENSION (DYNES/CM) = FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GALCC DEG C CC/MOLE ATM. 31.37 374.19 3486 표

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.44-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) .054 DIFFUSION COEF.

PAGE NUMBER B-130

20.0 DEGREES C.

AT

END OF COMPOUND EA 1255

Appendix B

UNCLASSIFIED

GENERAL REFERÊNCE: TCR36 25.0 DEGREES CENTIGRADE ¥ 1255 SUMMARY OF PROPERTIES OF EA COMMON NAME:

FORMULA WEIGHT:

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00105 *TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORRIE .1240) AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.0647 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 275.8 -2.46410, B* -794.03, C* THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.46410, B= -794.(
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR56 P.11
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 1.498

22.2 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 C 24.2 AT SURFACE TENSION (DYNES/CM) = FREEZING POINT (DEG. CENT.) =

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE AIM.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

31.37

442.21

374.19

.3486

VISCOSITY OF VAPOR = 6.56-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE WIDDIFIED SUTHERLAN TEQ., J.PHY.CHEM.49,23(1944)

END OF COMPOUND EA 1255

25.0 DEGREES ¥ 1255

PAGE NUMBER B-131

Appendix B

. ¥ UNCI

1 1255 AT 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 154.1 COMMON NAME: SCHWARY

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00105 +TEMP.(C.) DETERMINED OVER VAPOR PHESSUREITORR)* .12401 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)* 1.0489 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0909 - THE TEMPERATURE RANGE 10.0-TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 275.8 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A= ~2.46410, B= ~794.03, C= TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE:TCR56 P.11 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES)=

22.2 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 C 24.2 AT -78.00 SURFACE TENSION (DYNES/CM) = FREEZING POINT (DEG. CENT.)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE ATM. 뿔

ZHURN. FIZ KHIM. 37. 201 (1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR Ź 31.37 CC/NOLE .062 DIFFUSION COEF. 374.19 3486

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.94-03 CENTIPOISE STHE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1255

PAGE NUMBER B-132

ပ

40.0 DEGREES

۲

Appendix B

160

ZHURN. FIZ KHIM. 37. 201(1963)

-40.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF

FORMULA WEIGHT: COMMON MAME:

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** WARNING: SINCE THERE IS NO BOILING POINT TO ESTIMATE A BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE:

.00106 *TEMP. (C.) DETERMINED DVER VAPOR PRESSURE(TORR)= .45+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.1401 WAS CALCULATED FROW THE EQUATION: DENSITY= 1.0977 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

MANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 273.2 -2.36333, 8= -762.65, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.36333, B= -762.(
PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.13 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY

8.084 VISCOSITY (CENTISTOKES). ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: 1CR36 REFERENCE: TCR36 CENT 27.6 AT 25.7 DEG. 23.5 DEG. CENT. ¥ SURFACE TENSION (DYMES/CM) = REFRACTIVE INDEX(ND) = .1.3950

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURF GIA/CC DEG C CC/MOLE ATM. 뿔

31.50 CC/MOLE 439.19 372.50

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .032 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.96-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MUDIFIED SUTHERLANDS EQ., J. PHY.CHEM, 48, 23(1944) PAGE NUMBER

ن

-40.0 DEGREES

7

1258

END OF COMPOUND EA

UNCL SSIFIED

SUMMANY OF PROPERTIES OF EA 1258 AT --20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOCIS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00106 *TEMP. (C.) DETERMINED OVER VAPOR PYESSURE(TORR)= .45+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.1189 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0977 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

FANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 273.2 THE FILLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.36333, B= -762.65, C* TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.13 WERE USED TO CALCULATE THE VISCOSITY 4.459 VISCOSITY(CENTISTCKES)=

**** OF THE DATA TEMPERATURE RANGE * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

REFERENCE: TCR36 25.7 DEG. CENT. 27.5 AT 25.7 DE 23.5 DEG. CENT. REFRACTIVE INDEX(ND)= 1.3950 AT Ħ SURFACE TENSION (DYNES/CM)

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE PRESSURE GLA/CC DEG C CC/MOLE ATM. 31.50 439.19 .3510 TE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF. .

VISCOSITY OF VAPOR - 5.47-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1258 AT -20.0 DEGREES C.

PAGE NUMBER 8-134

Appendix B

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****
MARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00106 +TEMP. (C.) DETERMINED OVER COMMON NAME: FORMULA WEIGHT: 154.1 **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT DETERMINED OVER THE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMSERATURE RANGE **** .0 DEGREES CENTIGRADE TORR)= .45+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 1.0977 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0977 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 273.2 -762.65, C* FOLLOWING ANTOINE CONSTANIS(EATR 4491): A= -2.36333, B= -762.(Perature range 25.0 to 50.0 deg. cent. Reference:tcr36 p.13 WERE USED TO CALCULATE THE VISCOSITY THE TEMPERATURE RANGE DENSI TY (G/ML) = TEMPERATURE RANGE

1258

SUMMARY OF PROPERTIES OF EA

SANSAN BENEVER MACCOCCUPING

かんとうとうとう

100 C

The state of the state of

うとゆいけない 一次は大き

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **TCR36** REFERENCE: CENT. 27.6 AT 25.7 DEG. 23.5 DEG. CENT.

2.683

VISCOSI FY (CENTISTOKES)*

REFERENCE: TCR36

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY.

SURFAL.

REFRACTIVE

REFRACTIVE

REFRACTIVE

REFRACTIVE

REFRACTIVE

REFRACTIVE

REFRACTIVE

REFRACTIVE

CANOLE

GAYCE

DEG C CC/MOLE

GAYCE

DIFFUSION COEF. # .046 CM.SQ./SEC CALCUL.

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF CCMPOUND EA 1258 P

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR - 5.98-03 CENTIPOISE

.O DEGREES C. ¥

PAGE NUMBER 8-135

**** WARNING: SINCE THERE IS NO WELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ASOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00106 *TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: A BOILING POINT, THE VALUES CALCULATED ASOVE THE DATA RANGES MAY BE ABOVE 20.0 DEGREES CENTIGRADE VAPOR PRESSURE(TORR)= .45+00 AY 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.0765 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0977 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 WEIGHT: PROPERTIES OF EA SUNTARY

DETERMINED 273.2 -762.65, C* THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.36333, B= -762.0 Temperature range 25.0 to 50.0 deg. cent. Reference:TCR36 P.13 Were used to calculate the Viscosity

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

OVER THE

RANGE

1.730 VISCOSITY (CENTISTOKES)= **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR38 27.6 AT 25.7 DEG. CENT. 23.5 DEG. CENT. SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3950 AT

ZHURN. FIZ KHIM. 37. 20! (1963) FILIPPOV. PRCºERTIES WERE ESTIMATED USING THE METHOD OF PRESSURE CC/MULE VOLUME FOLLOWING CRITICAL P. 57/00

31.50

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.48-03 CENTIPUISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

DIFFUSION COEF.

3510

PAGE NUMBER 8-136

ပ

20.0 DEGREES

¥

1258

END OF COMPOUND EA

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL FORMULA WEIGHT: 154.1 FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 25.0 DEGREES CENTIGRADE DENSITY(G/ML)= 1.0712 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0977 -- THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT 1258 SINCE THERE IS NO MELTING POINT I SUMMARY OF PROPERTIES OF EA ***** WARNING:

.00106 +TEMP. (C.) DETERMINED DVER

DETERMINED OVER THE 273.2 -2.36333, B= -762.65, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.36333, B= -762.6 Temperature range 25.0 TC 50.0 Deg. Cent. Reference:TCR36 P.13 Werf used to calculate the Viscosity 1.565 VISCOSITY (CENTISTOKES)=

REFERENCE: TCR36 REFERENCE: TCR36 25.7 DEG. CENT. 27.6 AT 25.7 DI 23.5 DEG. CENT SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 7.3950

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATE. CC/NOLE VOLUME DENSITY TEMPERATURE GM/CC DEG C THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .058 DIFFUSION COEF.

439.19

372.50

.3510

CENTIPOISE PROPERTIES AND THE VISCOSITY OF VAPOR - 6.61-03 S THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF

END OF COMPOUND EA 1258 AT 25.0 DEGRE

25.0 DEGREES C.

PAGE NUMBER B-137

165

ZHURN. FIZ KHIM. 37. 201 (1963)

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: TCR36 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 154.1 1258 Ž SUNIMARY OF PROPERTIES OF COMMON NAME: **** WARNING:

.00106 *TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .45+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.0553 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0977 = THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 273.2 ť -762.65, FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* ~2.36333, B* ~762.6 Erature range 25.0 to 50.0 deg. cent. Reference:tcr36 p.13 1.180 WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

VISCOSITY(CENTISTOKES)=

REFERENCE: TCR36 REFERENCE: TCR36 CENT. 25.7 DEG. 27.6 AT 25.7 DI 23.5 DEG. CENT ¥ SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.3950

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. 31.50 CC/MOLE 372.50 GM/CC . 3510 U F

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .062 DIFFUSION COEF.

CENTIPOISE PROPERTIES AND THE VISCUSITY OF VAPOR = 6.98-03 VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)

PAGE NUMBER B-138

40.0 DEGREES C.

₹

1258

END OF COMPOUND EA

ZHURY. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: TCR36 -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1261 SUMMARY OF PROPERTIES OF EA COMMON NAME:

MARNING: SINCE THERE IS NO BOILLNG POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00112 +TEMP.(C.) DETERMINED OVER REFERENCE: TCR36 NSITY= 1.1320 -REFERENCE: TCR36 .14+01 AT 25.0 DEG. CENT. REFERENC WAS CALCULATED FROM THE EQUATION: DENSITY= 25.0 TO 50.0 DEG. CENT. REFERENCE: TO 1.1768 VAPOR PRESSURE(TORR)= HE TEMPERATURE RANGE

DETERMINED OVER THE RANGE **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE 273.2 ő 8= -686.15, THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.18302, B= -686.1 Temperature range 25.0 to 50.0 deg. cent. Reference:tcr36 p.14 5.752 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES).

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TCR36 26.8 AT 24.3 DEG. CENT. 22.2 DEG. CENT. -52.00 REFERENCE: TCR36 4 REFRACTIVE INDEX(ND)= 1.3870 FREEZING POINT (DEG. CENT.)= SUPFACE TENSION (DYNES/CM) .

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 35.25 363.11 35.25 THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF.

VISCOSITY OF VAPOR . 5.23-03 CENTIPDISE THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23(1944)

-40.0 DEGREES C.

¥

1261

END OF COMPOUND EA

PAGE NUMBER B-139

Appendix B

ASSIFIED

167

GENERAL REFERENCE: TCR36 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 126t SUMMARY OF PROPERTIES OF EA COMMON NAME: MARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00112 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.1544 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1320 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CEMT

**** PANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 273.2 -686.15, C* THE FOLLOWING AWTOINE CONSTANTS(EATR 4491): A* -2.18302, B* -686. Temperature range 25.0 to 50.0 deg. Cent. Reference:TCR36 P.14 Were used to calculate the Viscosity VISCOSITY(CENTISTOKES)=

**** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 26.8 AT 24.3 DEG. CENT. 22.2 DEG. CENT. -52.00 REFERENCE: TCR36 REFRACTIVE INDEX(ND) = 1.3870 AT FREEZING POINT (DEG. CENT.) = SURFACE TENSION (DYNES/CM)

ZHURN. FIZ KHIM. 37. 201 (1963)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM.

ABOYE CRITICAL PROPESTIES AND THE VISCOSITY OF VAPOR = 5.77-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1261 .043 DIFFUSION COEF. .

-20.0 DEGREES C. AT

PAGE NUMBER 8-140

Appendix B

UNCL **\SSI**

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TCR36 1 1261 AT .0 DEGREES CENTIGRADE FORMULA WEIGHT: 140.1 SUMMARY OF PROPERTIES OF EA

NO VAPOR PRESSURE DATA TO ESTIMATE **** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BUILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00112 +TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR)* .14401 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(2/ML)* 1.1320 MAS CALCULATED FROM THE EQUATION: DENSITY* 1.1320 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 VAPOR PRESSURE (TORRIE DENSITY (G/ML)=

**** RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 273.2 THE FOLLOWING ANTOINE CONSTANTS[EATR 4491): As -2.18302, Bs -686.15, Cs TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.14 2.132 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

**** OF THE DATA TEMPERATURE RANGE * * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT

REFERENCE: TCR36 26.8 AT 24.3 DEG. CENT. 22.2 DEG. CENT. -52.00 REFERENCE: TCR36 ¥ SURFACE TENSION (DYMES/CM) *
REFRACTIVE INDEX(ND) * 1.3870
FREEZING POINT (DEG. CENT.)*

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE YOLUME PRESSURE GA/CC DEG C CC/MOLE ATM. 3638 360.23 385.11 35.25 A. Ή

DIFFUSION COEF. * .051 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23 (1944)

END OF COMPOUND EA 1261 AT .0 DEGREES C.

PAGE NUMBER B-141

Appendix B

UNCLASSIFIED

GENERAL REFERENCE: TCR36 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 140.1 1261 7 SUMMARY OF PROPERTIES OF COMMON NAME:

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00112 *TEMP. (C.) DETERMINED DVER .14+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 WAS CALCULATED FROM THE EQUATION: DEHSITY= 1.1320 -- 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 1.1096 VAPOR PRESSURE(TORR)= THE TEMPERATURE RANGE DENSITY (G/ML)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE -686.15, C# 273.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.18302, B= -686.1 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.14 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTORES)= 1.437

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36 26.8 AT 24.3 DEG. CENT. 22.2 DEG. CENT. -52.00 REFERENCE: TCR38

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. SURFACE TENSION (DYNES/CM) = 26.8 AT 24.

REFRACTIVE INDEX(ND) = 1.3870 AT 22.2 DEG. C
FREEZING POINT (DEG. CENT.) = -52.00 REFE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED US
DENSITY TEMPERATURE VOLUME PRESSURE
GIA/CC DEG C CC/MOLE ATM.
35.38 360.23 385.11 35.25

DIFFUSION COEF. = .059 CM.SQ./SEC CALCULAT

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

VAPOR WAS ESTIMATED USING THE

20.0 DEGREES C. AT

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 6.83-03 CENTIPOISE

PAGE NUMBER B-142

ZHURN. FIZ KHIM. 37. 201 (1983)

25.0 DEGREES CENTIGRADE FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA 1261 COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL. GENERAL REFERENCE: TCR38

.00112 +TEMP.(C.) DETERMINED QVER VAPOR PRESSURE(TORR) = .14401 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML) = 1.1040 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1320 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED DVER THE 273.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.18302, B= -686.15, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.14 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 1.313

REFERENCE: TCR36 ¥

REFERENCE: TCR36 26.8 AT 24.3 DEG 22.2 DEG. CENT. -52.00 REFERENCE SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3870 FREEZING POINT (DEG. CENT.)= FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 385.11 CM/CC 3638 ¥ U

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .061 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 6.96-03 CENTIPOISE

PAGE NUMBER B-143

25.0 DEGREES C.

¥

END OF COMPOUND EA 1261

GENERAL REFERENCE: TCP36 40.0 DEGREES CENTIGRADE 1261, AT 40.0 DEGR FORMULA WEIGHT: 140.1 Z SUMMARY OF PROPERTIES OF COMMON NAME:

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00112 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .14+01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.0872 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1320 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.18302, B= -686.15, C= 273.2 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.14 WERE USED TO CALCULATE THE VISCOSITY

26.8 AT 24.3 DEG. CENT. 22.2 DEG. CENT. -52.00 REFERENCE: TCR36 1.019 SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND)= 1.3870 AT FREEZING POINT (DEG. CENT.)= VISCOSITY(CENTISTOKES)*

ZHURN. FIZ KHIM. 37. 201 (1963) REFERENCE: TCR36

MERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE FOLLOWING CRITICAL PROPERTIES DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 116

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 7.35-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) END OF COMPOUND EA 1261

40.0 DEGREES C.

¥

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

.068

DIFFUSION COEF.

PAGE NUMBER 8-144

Appendix B

ASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TCR36 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 182.2 1262 Ę SUNTARY OF PROPERTIES OF COMMON NAME: WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOYE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ****

.00094 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)* .80-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)* 1.0541 MAS CALCULATED FROM THE EQUATION: DENSITY* 1.0465 -- THE TEMPERATURE RANGE 25.0 TG 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 200.0 THE FULLDWING ANTOINE CONSTANTS(EATR 4491): A= -1.88450, B= -510.09, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.15 WERE USED TO CALCULATE THE VISCOSITY 20.082 VISCOSITY (CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TCR36 CENT. REFERENCE: TCR36 24.0 DEG. 26.8 AT -50.0 SURFACE TENSION (JYNES/CM) = MELTING POINT (DEG. CENT.) = REFRACTIVE INDEX(ND) = 1.4050

REFERENCE: TCR38 23.0 DEG. CENT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE ATK. DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 410.84 GM/CC . 3297

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .027 DIFFUSION COEF.

VISCOSITY OF VAPOR - 4.45-03 CENTIPOISE PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF

-40.0 DEGREES C. AT END OF COMPOUND EA 1262

PAGE NUMBER 8-145

GENERAL REFERENCE: TCR36 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 1262 ¥ SUMMARY OF PROPERTIES OF COMMON NAME:

IS NO VAPOR PRESSURE DATA TO ESTIMATE BOILING POINT AND NOT MEANINGFUL WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE

.00094 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML)= 1.0653 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0465 - 1.0652 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.0465 - 1.046

**** WARNING: THE ABOVE VALUES ARE EXTRAPCLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 200.0 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.88490, B= -510.03, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.15 TEMPERATURE RANGE 25.0 TO 50.0 DI WERE USED TO CALCULATE THE VISCOSITY

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

8.885

VISCOSITY (CENTISTOKES)=

REFERENCE: 1CR36 8.8 AT 24.0 DEG. CENT. .0 REFERENCE: TCR36 23.0 DEG. CENT. 26.8 AT -50.0 R SURFACE TENSION (DYNES/CM) # NFLTING POINT (DEG. CENT.) # -:
REFRACTIVE INDEX!ND)# 1.4050 AT

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLIME THE

PRESSURE CC/MOLE 552.53 634/CC . 3297

DVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 4.91-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAFOR IN THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) .033 DIFFUSION COEF.

AT -20.0 DEGREES END OF COMPOUND FA 1262

PAGE NUMBER B-146

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TCR36 . O DEGREES CENTIGRADE 182.2 FORMULA WEIGHT: 1262 SUMMARY OF PROPERTIES OF EA COMMON NAME:

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00094 "TEMP. (C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .80-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY:G/ML)= 1.0465 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0465 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 200.0 8= -510.09, C= HERE USED TO CALCULATE THE VISCOSITY
VISCOSITYCEMETERS SENTETORS P.15

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

26.8 AT 24.0 DEG. CENT. -50.0 REFERENCE: TCR36 IT 23.0 DEG. CENT. MELTING POINT (DEG. CENT.) = REFRACTIVE INDEX(ND)= 1.4050 SURFACE TENSION (DYNES/CM) .

REFERENCE: TCR36

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR • 5.37-03 CENTIPOISE GAI/CC DEG C CC/MOLE ATM.

3297 410.84 552.53 26.53

DIFFUSION COEF. - .039 CM.SQ./SEC CALCULATED FOR VAPOR I

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL

MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1262 AT .0 DEGRE

.0 DEGREES C.

ZHURN. FIZ KHIM. 37. 201(1963)

20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 182.2 Y 1262 SURMARY OF PROPERTIES OF COMMON NAME:

C

A. A. A.

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00094 +TEMP.(C.) DETERMINED OVER .80-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0455 -REFERENCE: TCR36 25.0 TO 50.0 DEG. CENT. DENSITY (G/ML) = 1.0277 THE TEMPERATURE RANGE VAPOR PRESSURE (TORRIE

DETERMINED OVER THE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE 200.0 -510.09, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491)! A= -1.88490, B= -510.0 Temperature range 25.0 to 50.0 deg. cent. Reference:TCR36 p.15 Were used to calculate the viscosity

***** WARNING: THE AROVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

2.713

VISCOSITY(CENTISTOKES)=

REFERENCE: TCR36 REFERENCE: TCR36 CENT 3.8 AT 24.0 DEG. CEN: .0 REFERENCE: TCR36 23.0 DEG. CENT.

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/KOLE ATM. . 3297 410.04, 552.53 26.53 SHIRFACE TENSION (DYNES/CM) = 26.8 AT 24.0

MILTING POINT (DEG. CENT.) = -50.0 REFERENCE

REFRACTIVE INDEX(ND) = 1.4050 AT 23.0 DEG. CENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING

DENSITY TEMPERATURE VOLUME PRESSURE

GA/CC DEG C CC/COLE ATM.

32.97 410.54 552.53 26.53

DIFFUSION COEF. = .046 CM.SQ./SEC CALCULATED

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.82-03 CENTIPDISE

PAGE NUMBER B-148

20.0 DEGREES

۲

GENERAL REFERENCE: TCR36 1262 AT 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: 182.2 2 SUMMARY OF PROPERTIES OF COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BGILING PUINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOIL' 'G POINT AND NOT MEANINGFUL

.00094. +TEMP.(C.) DETERMINED OVER VAEDR PRESSURE(TORR)= .80-01 AT 25.0 DEG. CENF. REFERENCE: TCR36 DENSITY(G/ML)= 1.0230 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0465 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR35

DETERMINED OVER THE THE FOLLDWING ANTOINE CONSTANTS(EATR 4491): A* -1.88490, B* -510.09, C* 200.0 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.15 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOMES)* 2.410

REFERENCE: TCR36 24.0 DEG. CENT. .0 REFERENCE: TCR36 23.0 DEG. CENT. 26.8 AT -50.0 SURFACE TENSION (DYNES/CM) = MELTING POINT (DEG. CENT.) = -ERFRACTIVE INDEX(MD) = 1.4050 AT ZHURN. FIZ KHIM. 37. 201 (1963)

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ

DENSITY TEMPERATURE. VOLUME ATM.

31/CC DEG C CC/MOLE ATM.

3297 410.84 552.53 26.53

DIFFUSION COEF. = .047 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

DIFFUSION COEF. = .047 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE END OF COMPOUND EA 1262 AT 25.0 DEGREES C. PAGE

PAGE NUMBER B-149

GENERAL REFERENCE: TCR36 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00094 *TEMP.(C.) DETERMINED OVER VAPOR PRESSURE(TORR)= .80-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.0089 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0465 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

DETERMINED OVER THE 200.0 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.88490, B= -510.09, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.15 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 1.7

REFERENCE: TCR36 6.8 AT 24.0 DEG. CENT. .0 REFERENCE: TCR36 23.0 DEG. CENT. 26.8 AT -50.0 R SURFACE TENSION (DYNES/CM) = MELTING POINT (DEG. CENT.) = REFRACTIVE INDEX(ND) = 1.4050

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE HE

CC/NOLE 552.53 410.84 3297 22/1:5

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .053 DIFFUSION COEF. .

STHE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE STANDING THE WODIF (ED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.28-03 CENTIPOISE IN THE SUPPLY OF COMPOUND EA 1252 AT 40.0 DEGREES C. PAGING PAGING IN THE PAGIN

PAGE NUMBER 8-150

**** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. ***** GENERAL REFERENCE: CELETING POINT IN LIEU OF 238.3 FORMULA WEIGHT: 1263 SCHURARY

.00082 *TEMP.(C.) DETERMINED DVER REFERENCE: TCR36:NSITY* .9872 -ORR): .40-01 AT 25.0 DEG. CENT. REFERENCE .9954 WAS CALCULATED FROM THE EQUATION: DENSITY: RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR PRESSURE (TORRIS DENSITY (G/ML) =

**** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

THE TESPERATURE RANGE

REFERENCE: TCR36

DETERMINED OVER THE 204.2 -663.14, C≖ IS(EATR 4491): A= -2.15850, B= -663. 50.0 DEG. CENT. REFERENCE:TCR36 P.16 FULLOWING ANTOINE CONSTANTS(EATR 4491): A= 25.0 15 TEMPERATURE HANGE

18.038 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 18.0 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: TCR36

26.3 DEG. CENT. REFERENCE: TCR36 28.4 AT -10.00 SURFACE TENSION (DYNES/CM) = FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE UNCL

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .028 DIFFUSION COEF.

20.08

777.59

3064

VISCOSITY OF VAPOR = 4.48-03 CENTIPOISE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

PAGE NUMBER 8-154

ZHURN. FIZ KHIM. 37. 201(1963)

.00082 +TEMP. (C.) DETERMINED DVER GENERAL REFERENCE: TCR3G
THEREFORE THE LIQUID PROPERTIES ARE COMMON NAME: FORMULA WEIGHT: 238.3 GENEES CENTIGRADE VALID ONLY FOR SUPECOCLED LIQUID AND NOT THE SOLID *****

VAPOR PRESSURE(TORR)= .40-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= 1.0036 WAS CALCULATED FROM THE EQUATION: DENSITY= .9872 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** RANGE *+*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE DETERMINED OVER THE 204.2 -663.14, C= FCLLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.15850, B* -663.1 Perature range 25.0 to 50.0 deg. cent. Reference:tcr36 p.16 TEMPERATURE RANGE

27.641 WERE USED TO CALCULATE THE VISCOSITY VISCOSII/(CENTISTOKES)=

**** OF THE DATA TEMPERATURE RANGE * *** WAENING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: TCR36

1CR36 CENT. REFERENCE: 26.3 DEG.

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GW/CC DEG C CC/MOLE ATM. SURFACE FENSION (UNNES/CM) = 28.4 AT 26.:
FREEZING POINT (DEG. CENT.) = -10.00 REFER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USI

DENSITY TEMPERATURE VOLUME PRESSURE

GW/CC DEG C CC/MOLE ATM.

3064 455.57 777.59 20.08

DIFFUSION CDEF. = .026 CM.SO./SEC CALCULATED

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) V

END DF COLLOR.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

VISCOSITY OF VAPOR = 4.28-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE

PAGE NUMBER B-152

ပံ

Appendix B

-20.0 DEGREES ۲

ZHURN. FIZ KHIM. 37. 201(1963)

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING PJINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00082 *TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: TCR36 .0 DEGREES CENTIGRADE VARDER PHESSURE(TORR)= .40-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 Density(G/ML)= .9872 was calculated from the equation: Density= .9872 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 FORMULA WEIGHT: 238.3 SUMMARY OF PROPERTIES OF EA COMMON NAME:

1263

DETERMINED OVER THE 204.2 -663.14, C* TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCEITCR36 P.16 VISCOSITY LECTRED TO CALCULATE THE VISCOSITY

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: TCR36

26.3 DEG. CENT. REFERENCE: TCR36 28.4 AT -10.00 SURFACE TENSION (DYNES/CM) = FREEZING POINT (DEC. CENT.)=

PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. E FOLLOWING CRITICAL PROPENT.

DENSITY TEMPERATURE VOLUME

OEG C CC/MOLE

777.59

PRESSURE 20.08 DIFFUSION COEF. = .030 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

THE VISCOSITY OF THE VAPOR WAS CENTIPOISE

THE VISCOSITY OF VAPOR = 4.68-03 CENTIPOISE

THE VISCOSITY OF VAPOR = 4.68-03 CENTIPOISE

THE VISCOSITY OF THE VAPOR WAS CENTIPOISE

THE VAPOR WAS CENTI

PAGE NUMBER B-153

HE

GENERAL REFERENCE: TCR36 1 1263 AT 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 238.3 SUMMARY OF PROPERTIES OF EA 1263 COMMON NAME: FORMULA

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

JRR)= .40-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 .3708 MAS CALCULATED FROM THE EQUATION: DENSITY= .9872 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 VAPOR PRESSURE(TORR)= THE TEMPERATURE RANGE DENSITY(G/ML)=

.00082 *TEMP.(C.) DETERMINED OVER

DETERMINED OVER THE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 204.2 THE FULLOWING ANTOINE CONSTANIS(EATR 4491): A= -2.15850, B= -663.14, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:ICR36 P.16 WERE USED TO CALCULATE THE VISCOSITY 6.259

*:*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

26.3 DEG. REFERENCE: 28.4 AT -10.00 FREEZING POINT (DEG. CENT.)

REFERENCE: TCR36 CENT.

ZHURN. FIZ KHIM. 37. 201(1963) GAZCC DEG C CC/MOLE ATM.

3.064 455.57 777.59 20.08

DIFFUSION COEF. * .035 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE END OF COMPOUND EA 1263 AT 20 0 0 0 CENTIPOISE

PAGE NUMBER B-154

UNCL

GENERAL REFERENCE: TCR36 1263 AT 25.0 DEGREES CENTIGRADE FORMULA WEIGHT: 238.3 SUMMARY OF PROPERTIES OF EA COMMON NAME:

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA FANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00082 +TEMP.(C.) DETERMINED OVER .40-01 AT 25.0 DEG. CENT. REFERENCE: TCR36 WAS CALCULATED FROM THE EQUATION: DENSITY= .9872 - 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 VAPOR PHESSURE(TORR) = 00:07 THE TEMPERATURE RANGE

DETERMINED OVER THE 204.2 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): As -2.15850, Bs -663.14, Cs TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.16 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTUKES): 5.429

REFERENCE: TCR36 26.3 DEG. CENT. REFERENCE: TCR36 28.4 AT -10.00 SURFACE TENSION (DYNES/CM) * FREEZING POINT (DEG. CENT.)* Y THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE SOUTH OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE SOUTH OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE SOUTH OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE SOUTH OF THE VAPOR WAS CENTIPOISE OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE SOUTH OF THE VAPOR WAS CONTINUED OF THE VAPOR WAS CONTINUED.

ZHURN. F12 KHIM. 37. 201 (1963)

PAGE NUMBER 8-155

GENERAL REFERENCE: TCR36 1263 AT 40.0 DEGREES CENTIGRADE FORMULA MEIGHT: 238.3 AT 1263 SUMMARY OF PROPERTIES OF EA COMMON NAME:

行人に対対的

**** WARNING: SINCE THERE'IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00082 *TEMP.(C.) DETERMINED OVER REFERENCE: TCR36 DENSITY(G/ML)= .9544 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 50.0 DFG. CENT.

DETERMINED OVER THE 204.2 REFERENCE: TCR36 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= "2.15850, B= -663.14, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR36 P.16 WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 3.606

26.3 DEG. CENT.

REFERENCE: TCR36 REFERENCE: TCR36 28.4 AT -10.00 SURFACE TENSION (DYNES/CM) * FREEZING POINT (DEG. CENT.)*

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV DENSITY TEMPERATURE VOLUME PRESSURE GIA/CC DEG C CC/MOLE ATM.

뿔

20.08 3064

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .041 CIFFUSION COEF. *

40.0 DEGREES C. ¥ S MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

S MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1263

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.49-03 CENTIPOISE

PAGE NUMBER 8-156

EA 1264 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 224.3 OF PROPERTIES OF EA

GENERAL REFERENCE: TCR36 COMMON NAME:

TOTAL BUILDING WASSELL

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ****

.00088 +TEMP. (C.) DETERMINED OVER REFERENCE: TCR36 DN: DENSITY# .9839 -REFERENCE: TCR36 TORR!= .12+00 AT 25.0 DEG. CENT. REFERENC 1.0191 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TO THE TEMPERATURE RANGE VAPOR PRESSURE (TORRIE DENSITY(G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DITERMINED OVER THE 160.4 TAR FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.85290, B= -444.97, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P.17 WERF. USED TO CALCULATE THE VISCOSITY

69.853 VISCOSITY (CENTISTOKES) =

DATA TEMPERATURE RANGE OF THE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

25.0 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 C 25.1 AT -78.00 SURFACE TENSION (DYMES/CM) = FREEZING POINT (DEG. CENT.)=

ZHURN. FIZ KHIM. 37. 201 (1963) FULLOWING CATTICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

ATM. CC/MOLE 724.04 413.19 .3097 33/W5

VISCOSITY OF VAPOR - 4.11-03 CENTIPOISE DIFFUSION COEF. * .022 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE WODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 4.11-03 (

END OF COMPOUND EA 1264 AT -40.0 DEGREES C.

PAGE NUMBER B-157

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: TCR36 AT -20.0 DEGREES CENTIGRADE 224.3 FORMULA WEIGHT: 1264 SUNMARY OF PROPERTIES OF EA COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING PUINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00088 *TEMP.(C.) DETERMINED OVER REFERENCE: TCR36 1.0015 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: TC 25.0 DEG. CENT. 7 .12+00 PRESSURL (TORR)= DENSITY (G/ML) =

JN: DENSITY# .9839 -REFERENCE: TCR36 THE TEMPERATURE RANGE

DETERMINED OVER THE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 160.4 -444.97, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.85290, B= -444.97 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P.17 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY

* . * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE * * * * *

20.767

VISCOSITY (CENTISTOKES)=

REFERENCE: TCR36 25.0 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 25.1 AT -78.00 SHRFACE TENSION (DYNES/CM) * FREEZING POINT (DEG. CENT.)*

FALLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

20.31 CC/MOLE 724.04 413.19 . 3097 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .027 DIFFUSION COEF.

THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR # 4.54-03 (

-20.0 DEGREES C.

AT

END OF COMPOUND EA 1264

PAGE NUMBER 8-158

CENTIPOISE

Appendix B

UNC

186

GENERAL REFERENCE: .0 DEGREES CENTIGRADE 224.3 GEN FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00088 *TEMP.(C.) DETERMINED OVER JKK)* .12+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 .9839 WAS CALCULATED FROM THE EQUATION: DENSITY* .9839 -VAPOR PRESSURE(TORR)= THE TEMPERATURE RANGE

***** KARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 160.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.85290, B= -444.97, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P.17 THE FOLLOWING ANTO TEMPERATURE RANGE

8.355 MERE USED TO CALCULATE THE VISCOSITY VISCOSIIY(CENTISTOKES). **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DID NOT FREEZE TO -78 C CENT. TCR36 25.0 DEG. REFERENCE: 25.1 AT -78.00 SURFACE TENSION (DYNES/CM) # FREEZING POINT (DEG. CENT.)#

ZHURN. FIZ KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 五

E VOLUME CC/MOLE 724.04 3097

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.96-03 CENTIPOISE DIFFUSION COEF. = .032 CM.SQ./SEC CALCULA

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944)

END OF COMPOUND EA 1264

.O DEGREES C. Y

PAGE NUMBER 8-159

20.0 DEGREES CENTIGRADE 11: 224.3 GENERAL REFERENCE: TCR36 FORMULA WEIGHT: ¥ 1264 SUMMARY OF PROPERTIES OF EA COMMON NAME:

The same of

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOYE THE DATA RANGES MAY BE ABOYE BOILING POINT AND NOT MEANINGFUL

10088 .TEMP.(C.) DETERNINED OVER VAPUR PRESSURE(TORR)= .12+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)= .9663 WAS CALCULATED FROM THE EQUATION: DENSITY= .9030 -- THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 DENSITY(G/ML)=

DETERMINED OVER THE SA A A **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 1.00 FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -1.85290, Br -444.97, Cs Perature range 25.0 to 50.0 deg. cent. Reference: TCR 36 P.17 TEMPERATURE RANGE 25.0 TO 50.0 DI WERE USED TO CALCULATE THE VISCOSITY

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATUME RANGE

4.114

VISCOSITY (CENTISTOKES)*

25.0 DEG. CENT. REFERENCE: TGRAGER ID -78 C 25.1 AT -78.00 FREEZING POINT (DEG. CENT.)= SURFACE TENSION (DYNES/CM)

ZHURN. FIZ KHIB. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. Density temperature volume pressure PRESSURE VOLUME

CC/MOLE GR/CC 3097

VISCOSITY OF VAPOR . 5.38-03 CENTIPOISE

PAGE NUMBER 6-160

UNCLA

25.0 DEGREE'S CENTIGRADE 1 1264 AT 25.0 DEGR! FORMULA WEIGHT: 224.3 SUMMARY OF PROPERTIES OF EA COMMON NAME:

4 ******

.....

GENERAL REFERENCE: TCA36

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL VAPOR PRESSIRE(TORRIE

.00088 *TEMP.(C.) DETERMINED OVER ORRIT 12+00 AT 25.0 DEG. CENT. REFERENCE: TCR36 .9619 WAS CALCULATED FROM THE EQUATION: DENSITY: .9839 --RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 HE TEMPERATURE RANGE DENSITY (G/ML) =

DETERMINED OVER THE THE FULLOWING ANTOINE CONSTANTS(EATR 4491): As ~1.85290, Bs -444,97, Cs 160.4 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR 38 P.17 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) = 3.5

25.0 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 C 25.1 AT -78.00 SURFACE TENSION (DYNES/CM) # FREEZING POINT (DEG. CENT.)#

3.529

ZHURN. FIZ KHIM. 37. 201(1963) THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE SOUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.49-03 CENTIPOISE END OF COMPOUND EA 1264 AT 25.0 DEGREES C. FALLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME 33

PAGE NUMBER B-161

GENERAL REFERENCE: TCR36 40.0 DEGREES CENTIGRADE FORMULA MEIGHT: 224.3 7 1264 SUMMARY OF PROPERTIES OF EA COMMON NAME: **** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00088 *TEMP.(C.) DETERMINED OVER . REFERENCE: TCR36 DN: DENSITY .. .9839 --REFERENCE: TCR36 DRR:= .12+00 AT 25.0 DEG. CENT. REFERENC .9487 WAS CALCULATED FROM THE EQUATION: DENSITY* ?ANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TO VAPOR PRESSURE(TORRI= DENSI TY (G/ML) =

DETERMINED OVER THE 160.4 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -1.85290, 8= -444.97, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:TCR 36 P.17 WERE USED TO CALCULATE THE VISCOSITY 2.333 VISCOSI IY (CENTISTOKES)* THE TEMPERATURE RANGE

25.0 DEG. CENT. REFERENCE: TCR36 REFERENCE: TCR36 DID NOT FREEZE TO -78 C 25.1 AT -78.00 FREEZING POINT (DEG. CENT.) . SURFACE TENSION (DYNES/CM)

DEFUCION OF THE VAPOR WAS ESTIMATED USING THE MEINDU OF THITTON.

CM/CC DEG C CC/MOLE ATM.

PAGE

CM/CC DEG C CC/MOLE ATM.

PAGE

CM/CC DEG C CC/MOLE ATM.

CM/CC DEG C CC/MOL FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ፗ

ZHURN. FIZ KHIM. 37. 201(1963)

PAGE NUMBER B-162

COMMON NAME: FORMULA WEIGHT: 168.1 GENERAL REFERENCE: ARCSL-TR-77001 DETERMINED OVER THE ESTIMATED BOILLING POINT(CENT.) = 196.2 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.2 VOLATILITY(MG/METER CUBED) = .16+02 VOLATILITY(MILLIMOLE/ METER CUBED) = .94-01 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** -40.0 DEGREES CENTIGRADE 273.2 BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.55430, 9* 2662.60, C*
TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 1274 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)= .14-02 SUNMARY OF PROPERTIES OF EA

THE CORPORATION OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PARTY OF

1.1020 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0620 - .00100 *TEMP.(C.) DETERMINED OVER RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 THE TEMPERATURE RANGE DENSITY(G/ML)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 273.2 ő THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.70210, B= -885.12, (TEMPERATURE RANCE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 C ABOVE VALUES AN TERM CONSTANTS(EATR 44 TEMPERATURE RANGE 25.0 TO 45.0 DEG. WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES).

12.424

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE SSIFIED

ATM. E VOLUME CC/MOLE 197.64 DENSITY TEMPERATURE GM/CC DEG C

385.55

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .030 DIFFUSION COEF.

CENT IPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MCDIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.70-03

-40.0 DEGREES C. ۲ 1274 END OF COMPOUND EA

PAGE NUMBER B-163

ZHURN. FIZ KHIM. 37. 201(1963)

.69+00 .00100 *TEMP.(C.) DETERMINED QVER **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNIESS LIQUID SUPERCOURS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.55430, B* 2662.60, C* 273.2 DETERMINED OVER THE FORMERATURE HANGE —29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL—TR—77001 -20.0 DEGREES CENTIGRADE ETER CUBED) = .12+03 VOLATILITY(MILLIMOLE/ METER CUBED) = 1.0620 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 - RANSE 25.0 TO 45.0 DEG. CENT. 1274 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: SUMMARY OF PROPERTIES OF EA THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. ESTIMATED BOILING POINT (CENT.) * 196.2 HEAT OF VAPORIZATION (KILOCALORIES/MOLE) * VOLATILITY(MG/METER CUBED)* TEMPERATURE HANGE -29.0 TO VAPOR PRESSURE(TORRIE DENSITY (G/ML) =

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

THE TEMPERATURE RANGE

REFERENCE: ARCSL-TR-7700

DETERMINED OVER THE

273.2 46 CONSTANTS(EATR 4491): A* -2.70210, B= -885.12, C= 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= WERE USED TO CALCULATE THE VISCOSITY Y:SCOSITY(CENTISTOKES)= TEMPERATURE RANGE

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE

FOLLOWING CRITICAL PROPERTIES MERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure 28.37 CC/MOLE 497.64 385,55 .3378 00/10 HH

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF. .

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.19-03 = 5.19-03

PAGE NUMBER 8-164 -20.0 DEGREES

A

1274

END OF CUMPOUND EA

Appendix B

100

ZHURN. FIZ KHIM. 37. 201(1963)

.38+01 .00100 *TEMP.(C.) DETERMINED DVER SUM MARY DE PROPERTIES OF EA 1274 AT .. O DEGREES CENTIGRADE
CONMON NAME: FORMULA WEIGHT: 168.1 GENERAL REFERENCE: ARCSL-TR-77001
***** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.55430, B* 2662.60, C* 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 REFERENCE: ARCSL-TR-77001 DENSITY(G/ML) = 1.0620 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 - THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: ESTIMATED BOILING POINT (CENT.) = 196.2

THE SOCIETY DESIGN SERVICE SWIMS HIDEK TREEDY WASSEN STALLED

DETERMINED OVER THE 273.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491); A= -2.70210, B= -885.12, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENY. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPCLATED OUT OF THE DATA TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE ****

FOLLOWING CRITCAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPONDENSITY TEMPERATURE VOLUME PRESSURE 28.37 CC/MDLE 497.64 385,55 G:4/CC .3378 Ή UNCLASSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .042 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.67-03 CENTIPDISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

.0 DEGREES C. ۲ END OF COMPOUND EA

PAGE NUMBER 8-165

OF THE DATA TEMPERATURE RANGE

***** WARNING: THE ABOYE VALUES ARE EXTRAPOLATED OUT

**** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.55430, B= 2662.60, C= 273.2 DETERMINED OVER THE

TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: GENERAL REFERENCE: ARCSL-TR-77001 VOLATILITY(MG/METER CUBED)= .27+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .16+02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** FORMULA WEIGHT: ESTIMATED BOILING POINT (CENT.) = 196.2 HEAT OF VAPORIZATION (KILDCALDRIES/MOLE) = COMMON NAME: 30+00 VAPOR PRESSURE(TOPR)=

20.0 DEGREES CENTIGRADE

SUMMARY OF PROPERTIES OF EA

September 1

DENSITY(G/ML) = 1.0420 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0620 - .00100 *TEMP.(C.) DETERWINED DVER The Temperature range 25.0 to 45.0 deg. cent. Reference: Arcsl-tr-77001 DETERMINED OVER THE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 273.2 -835.12, C=

DENSI IY (G/ML) =

FULLOWING ANTOINE CONSTANTS(EATR 4491): A* -2.70210, B= -835.12, (PERATURE RANGE 25.0 TG 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 2.076 TEMPERATURE RANGE 25.0 TO 45.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)=

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE DENSITY TEMPERATURE 31

A TK VOLUME CC/MOLE 497.64 385.55 . 3378 22/8.9

IVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.15-03 CENTIPOISE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE

USING THE

ESTIMATED

VAPOR

9

VISCOSIFY

.049 MAS

DIFFUSION COEF.

20.0 DEGREES C. 7 END OF COMPOUND EA 1274

PAGE NUMBER B-166

Appendix B

SSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: ARCSL-TR-77001 25.0 DEGREES CENTIGRADE 168.1 FORMULA WEIGHT: 1274 SUMMARY OF PROPERTIES OF EA

***** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.55430, B* 2662.60, C* 273.2 DETERMINED OVER THE TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

TEMPERATURE RANGE "29.0 IO 15.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)= .12+00

VOLATILITY(MG/METER CUBED) = .38+04 VOLATILITY(MILLIMOLE/ METER CUBED) = .23+02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** ESTIMATED BOILLING POINT(CENT.) = 196.2 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/WETER CUBED) = 38+04

.00100 +TEMP.(C.) DETERMINED OVER REFERENCE: ARCSL-TR-77001 DENSITY(G/ML) = 1.0370 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 -- THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77

DETERMINED OVER THE 273.2 FOLLCWING ANTOINE CONSTANTS(EATR 4491): As -2.70210, Bs -885.12, Cs PERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001

TEMPERATURE RANGE 25.0 TO 45.0 DEG. WERE USED TO CALCULATE THE VISCOSITY (DENTISTUKES)* 1.848

CONTRACTOR OFFICE AND ACTION OF THE CONTRACTOR O

FALLOMING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON, DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 497.64 ວະດີ 3**85.5**5 . 3378

C2NT IPO I SE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.27-03 MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944) PAGE NUMBER B-167

25.0 DEGREES C.

¥

END OF COMPOUND EA 1274

業 UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

VOLATILITY(MG/WETER CUBED)= .97+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .58+02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 40.0 DEGREES CENTIGRADE REFERENCE: ARCSL-TR-77001 1274 TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: SUMMARY OF PROPERTIES OF EA THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= VAFOR PRESSURE(TORR)= .11+01 ESTIMATED BOILING POINT(CENT.)= 196.2 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)=

STATES INTERNAL STATES

DENSITY(G/ML)* 1.0220 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0620 - .00100 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 DETERMINED OVER THE 273.2 FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.70210, B= -885.12, C= PERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 DENSITY (G/ML) =

1.332 THE FULLOWING ANTEL
TEMPERATURE RANGE 25.0 TO ASSECT
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 1.8

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C CC/MOLE ATM.

3378 385.55 497.64 28.37

DIFFUSION COEF. - .057 CM.SQ./SFC CALCULATED FOR VAPOR IN AIR

DIFFUSION COEF. - .057 CM.SQ./SFC CALCULATED FOR VAPOR IN AIR

HODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 6.62-07

END OF COMPOUND EA 1274 AT 40.0 DEGREES C.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.62-03 CENTIPDISE

PAGE NUMBER B-168

.00090 *TEMP.(C.) DETERMINED OVER COMMON NAME: FORMULA WEIGHT: 194.2 GENERAL REFERENCE: ARCSL-TR-77001
***** PLEASE NOTE: THE REQUESTED TEMPERATIBE IS OVER 25 DEGREES BELOW MELTING FOINT. THEHEFORE THE PROPERTIES
ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. **** DETERMINED OVER THE -40 DEG .14+00 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPEKATURE RANGE *** 1356 AT THE MELITING POINT IN LIEU OF REFERENCE: ARCSL-TR-77001 278.8 VOLATILITY(MG/METER CUBED) 3 .28+02 VOLATILITY(MILLIMGLE/ METER CUBEO) 3 DENSITY(G/ML) 4 1.1261 WAS CALCULATED FROM THE EQUATION: DENSITY 1.1175 - THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770 3165.10, C= TEMPERATURE RANGE -15.0 TO 180.0 DEG. CFNT. REFERENCE: ARCSL-TR-77001 9.13080, B= FOLLOWING ANTOINE CONSTANTS(EATR 4491): Am OF PROPERTIES OF EA HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= ESTIMATED BOILING POINT (CENT.) = 227.6 . 24-02 SUMMARY VAPOR PRESSURE(TORR)=

THE PROPERTY OF THE PROPERTY OF THE PARTY OF

1.00

DETERMINED OVER THE 273.2 ٿ THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -2.47160, Bs -949.86, (TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY 13.567 VISCOSITY (CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: >15 PROPYLENE CLYCOL, CWLR2093 Reference: water, Eatr-4210 REFERENCE: NB3392 DEGREE CENTIGRADE DEGREE CENTIGRADE REFERENCE: 31.8 AT 25.0 DEG. CENT. -9.6 REFERENCE: ARCSL-TR-77001 25.0 DEG. CENT. REFERE REFERENCE: NB3392 25.0 .150+02 AT .100+01 AT -9.60 REFRACTIVE INDEX(ND)= 1.4342 FREEZING POINT (DEG. CENT.)= SULUBILITY(G/100G SOLVENT) SCLUBILITY(G/100G SOLVENT) SURFACE TENSION (DYNES/CM) . MELTING POINT (DEG. CENT.)

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME DENSITY TEMPERATURE

A.TM. 28.45

CC/MOLE

563.02

474.18

3449

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 CIFFUSION COEF

VISCOSITY OF VAPOR # 4.94-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)

ပ -9.6 DEGREES 7 1356 A3 GNUOAMCO PO GNS

PAGE NUMBER 8-169

발 CONFIDENTIAL 197

GENERAL REFERENCE: ARCSL-TR-77001 THEREFORE THE LIQUID PROPERTIES ARE DETERMINED OVER THE LUMMON NAME: FORMULA WEIGHT: 194.2 GENE GENE VALID ONLY FOR SUPECCOLED LIQUID AND NOT THE SOLID ****

water the same statement with the second

1.

9.13080, 8= 3165.10, C= REFERENCE: ARCSL-TR-77001 TEMPERATURE RANGE -15.0 TO 180.0 DEG. CENT. REFER WERE USED IN CALCULATE THE FOLLOWING FOUR PROPERTIES:

. 80-03 INPOR PRESSURE(TORRIS

13.8 ENTIGATED BOILING POINT(CENT.)= 227.6 HEAT OF VAPORIZATION(KILOGALORIES/MOLE)=

VOLATILITY(#G/METER CUBED)= .98+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .51+01
***** #ARRING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE *****

.00090 *TEMP.(C.) DETERMINED DVER REFERENCE: ARCSL-TR-77001 DENSITY(G/ML) = 1.1355 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: A

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE DETERMINED OVER THE 273.2 -949.86, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.47160, B= -949.86, 0 Perature range 25.0 to 45.0 deg. cent. Reference:Arcsl-tr-77001 TEMPERATURE RANGE

19.079 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 19.0 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE BANGE

REFERENCE: NB3392 REFERENCE: .6 REFERENCE: ARCSL-TR-77001 25.0 DEG. CENT. REFEREI 25.0 DEG. CENT. 31.8 AT -9.6 R SURFACE FENSION (DYNES/CM) # MELTING POINT (DEG. CENT.)

REFERENCE: NB3392 .150+02 AT -9.60

REFERENCE: >15 PROPYLENE GLYCOL, CWLR2093 Reference: Water, Eatr-4210 25.0 DEGREE CENTIGRADE 20.0 DEGREE CENTIGRADE .100+01. AT REFRACTIVE INDEX(10) = 1.4342 AT FREEZING POINT (DEG. CENT.) = SOLUBILITY(G/100G SOLVENT) ... SOLUBILITY(G/100G SOLVENT) ...

ZHURN. FIZ KHIM. 37. 201 (1963 FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOU. PRESSURE DENSITY TEMPERATURE VOLUME

ATM. CC/MOLE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .032 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CHITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.71-03 CENTIPDISE

-20.0 DEGREES C. AT END OF COMPDUND EA 1356

PAGE NUMBER B-170

Appendix B

CONFIDENTIAL

198

ZHURN. FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: ARCSL-TR-77001 .0 DEGREES CENTIGRADE 194.2 GEN FORMULA WEIGHT: 7 1356 SUMMARY OF PROPERTIES OF EA COMMON NAME:

CHARLES TO SECURITY AND ASSESSMENT OF THE PARTY OF THE PA

DETERMINED OVER THE 278.8 9.13080, B= 3165.10, C= REFERENCE: ARCSL-TR-77001 FEMPERATURE HANGE -19.0 TO 180.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): . Am

IRE USED TO CALCULATE THE FOLLOWING FOUR PROPERTI VAPOR PPESSURE(TORR)* .60-02

.00090 +TEMP. (C.) DETERMINED OVER .35+00 VOLATILITY(W3/METER CUBED)= .69+02 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.1175 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1175 -THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770 13.9 ESTRATED BOILING POINT(CENT.) = 227.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) =

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE REFERENCE: ARCSL-TR-77001

DETERMINED OVER THE 273.2 IS(EATR 4491): A* -2.47160, B± -949.86, C* 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. WERE USED TO CALCULATE THE VISCOSITY 25.0 TO TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

10.135

VISCOSITY(CENTISTOKES)=

REFERENCE: N83392 REFERENCE: REFERENCE: ARCSL-TR-77001 25.0 DEG. CENT. 31.8 AT 9.6 REFRACTIVE INDEX(ND) = 1.4342 S REACE TENSION (DYNES/CM) . MELTING POINT (DEG. CENT.)

REFRACTIVE INDEX(ND) = 1.4342 AT 25.0 DEG. CENT. FREEZING POINT (DEG. CENT.) = -9.60 REFERENCE: NB3392 SOLUBILITY(G/100G SOLVENT) .150+02 AT 25.0 DEGREE SOLUBILITY(G/100G SOLVENT) .100+01 AT 3 20.0 DEGREE

REFERENCE: >15 PROPYLENE GLYCOL, CWLR2093 Reference: Water, Eatr-4210 25.0 DEGREE CENTIGRADE 20.0 DEGREE CENTIGRADE .100+01 AT .

FILLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM 28.45 CC/MOLE DENSITY TEMPERATURE VOLUME 563.02 3449

DIFFUSION COEF. * .038 CM.SQ./SEC CALCULATED F.R VAPOR IN AIR

WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.15-03 CENTIPOISE ABOVE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE NODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1356 AT . 0 DEGREES

PAGE NUMBER 8-171

REFERENCE: >15 PROPYLENE GLYCOL, CWLR2093 Reference: water, Eatr-4210

GENERAL REFERENCE: ARCSL-TR-77001 1356 AT 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 194.2 E SUMWARY OF PROPERTIES OF COMMON NAME:

DETERMINED OVER THE 278.8 ů

9.13080, B* 3165.10, C* REFERENCE: ARCSL-TR-77001 WERE USED IN CALCULATE THE FOLLOWING FOUR PROPERTIES: THE FULLOWING ANTOINE CONSTANTS(EATR 4491): Am TEMPERATURE RANGE -15.0 TO 180.0 DEG. CENT.

. 19+01 DENSITY(G/ML) = 1.0995 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1175 - THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. VAPOR PRESSURE(TORR) = .35-01 ESTIMATED BOILING POINT(CENT.) = 227.6 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) =

.00090 +TEMP.(C.) DETERMINED OVER REFERENCE: ARCSL-TR-77001

RANGE +.++ WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 273.2 IS(EATR 4491): A= -2.47160, B= -949.86, C= 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 THE FULLOWING ANTOINE CONSTANTS (EATR 4491): A= 23.0.10 TEMPERATURE RANGE

5.869 WERE USED TO CALC'JLATE THE VISCOSITY VISCOSITY(CEN)ISTORES)* *.** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: NB3392 REFERENCE: ARCSL-TR-77001 CENT. 25.0 DEG. 31.8 AT -9.6 F REFRACTIVE INDEXCIONS 1.4342 AT SURFACE TENSION LOYRES/CM) -POINT (DEG. CENT.) #

REFERENCE: REFERENCE: NB3392 25.0 DEG. CENT. FREEZING POINT (DLG. CENT.)=

25.0 DEGREE CENTIGRADE 20.0 DEGREE CENTIGRADE .150+02 AT .100+001. SCLUBILITY (G/103G SOLVENT) SOLUBILITY(G/1309 SOLVENT

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. CC/MOLE VOLUME DENSITY TEMPERATURE CONFIDENTIAL

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .045 DIFFUSION COEF.

3449

VISCOSITY OF VAPOR . 5.60-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

20.0 DEGREES C. ۲ 1358 A3 GNUDGMCD PD GN3

PAGE NUMBER B-172

ZHURN, FIZ KHIM. 37. 201(1963

GENERAL REFERENCE: ARCSL-TR-77001 DETERMINED OVER THE 25.0 DEGREES CENTIGRADE 276.8 9.13080, 8= 3165.10, C= REFERENCE: ARCSL-TR-77001 + GRAULA WEIGHT: AT WERE JSED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VIPOR PPESSURE(TORR)= .52-01 13.9 THE FULLOWING ANTOINE CONSTANTS/EATR 44910: A. TEMPERATURE RANGE -15.0 TO 180.6 DEG. CENT. 130.6 DEG. CENT. VAPOR P ESSURE(TOKR)= .52-01 ESTIMATED BOLLING POINT(CEN).)= 227.6 HEAT OF VAPORIZATION(KILDCALDATES/MOLE)= COLLINON MANE:

1356

¥

SUMMARY OF PROPERTIES OF

STATE OF CHILD

DETERMINED OVER THE 273.2 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): As -2.47160, Bs -949.86, Cs 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 TEMPERATURE RANGE

.00090 -TEMP.(C.) DETERMINED OVER

REFERENCE: ARCSL-TR-77001

VOLATILITY(MG/METER CUBED). .54+63 VOLATILITY(MILLIMOLE/ METER CUBED).
DEVSITY(G/ML) = 1.0950 WAS CALCULATED FROM THE EQUATION: DENSITY. 1.1175 THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770

5.179 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTONES) = 5.1

REFERENCE: >15 PROPYLENE GLYCOL, CW.R2093 REFERENCE: MATER, EATR-4210 REFERENCE: NB3392 REFERENCE: REFERENCE: ARCS:-TR-77001 25.0 DEG. CENT. -9.60 REFERENCE: NB3392 25.0 DEG. CENT. 25.0 .150+02 AT 31.8 AT -9.6 -9.60 REFRACTIVE INDEX (ND) = 1.4342 SHRFACE TENSION (OFNES/CM) . MOLTING POINT (DEG. CENT.) * FREEZING POINT (DEG. CENT.) = SCHUBILITY(G/100G SOLVENT) SCHUBILITY(G/100G SOLVENT)

25.0 DEGREE CENTIGRADE 20.0 DEGREE CENTIGRADE . 100+01 AT

FILLGMING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATH. 28.45 CC/MOLE DUNSITY TEMPERATURE VOLUME 563.02 474.18 G11,/CC ij

CM. SQ. / SEC CALCULATED FOR VAPOR IN AIR DITFUSION COEF. .

VISCOSITY OF VAPOR # 5.71-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VANGR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48.23(1944)

ပ 25.0 DEGREES 4 1356 END OF COMPOUND EA

8-173

PAGE NUMBER

CONFIDENTIAL

ZHURN. FIZ KHIM. 37. 201 (1963)

.00090 +TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: ARCSL-TR-77001 DETERMINED OVER THE 40.0 DEGREES CENTIGRADE 278.8 CUBED)= DENSITY(G/ML) = 1.0815 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.175 - THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CFNT WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= 15.00 194.2 FORMULA WEIGHT: AT 1356 EA ESTIMATED BOILING POINT(CENT.) = 227.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .16+04 SUMMARY OF PROPERTIES OF COMMON NAME:

DETERMINED OVER THE 273.2 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.47160, B= -949.88, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY 3.645 VISCOSITY (CENTISTOKES)*

REFERENCE: ARCSL-TR-77001

REFERENCE: >15 PRGPYLENE GLYCOL, CWLR2093 Reference: Water, Eatr-4210 REFERENCE: NB3392 DEGREE CENTIGRADE DEGREE CENTIGRADE REFERENCE: ARCSL-TR-77001 REFERENCE: NB3392 25.0 DEG. CENT. 25.0 20.0 31.8 AT 25.0 DEG -9.6 REFERENCE: [25.0 DEG. CENT. .150+02 AT .100+01 AT -9.60 REFRACTIVE INDEX(ND)= 1.4342 FREEZING POINT (DEG. CENT.)* SURFACE TENSION (DYNES/CM)
MELTING POINT (DEG. CENT.) SOLUBILITY(G/100G SOLVENT)

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 563.02 474.18 037/ES

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .052 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PKY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 6.05-03

40.0 DEGREES

۲

1356

END OF COMPOUND EA

PAGE NUMBER B-174

CENT 1POISE

THE CONFIDENTIAL

ZHURN. FIZ KHIM. 37. 201 (1963)

-40.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

THE STATE STATE STATES OF STATES AND STATES

.00087 *TEMP. (C.) DETERMINED DVER DENSITY(G/ML) = 1.1025 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0675 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 99.3 THE FOLLOWING ANTOINE CGNSTANTS(EATR 4491): A* -.83209, B* -187.39, C* TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)* 213.433

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: CWLR 2346 REFERENCE: CWLR 2346 31.0 AT 25.0 DEG. CENT. 25.0 DEG. CENT.

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

SURFACE TENSION (DYNES/CM) = 31.0 AT 25.0

REFRACTIVE INDEX(ND) = 1.4658 AT 25.0 DEG. CE

THE FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING CAMPORTIES WERE ESTIMATED USING CAMPORTIES WERE ESTIMATED USING CAMPORTIES WERE ESTIMATED USING CAMPORTIES WERE ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABONT THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE VAPOR WAS ESTIMATED USING

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 3.96-03 CENTIPDISE

PAGE NUMBER 8-175

ပ

-40.0 DEGREES

۲

**** WARHING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****
BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENFRAL REFERENCE: CWLR 2346 -20.0 DEGREES CENTIGRADE 269.3 SUMMARY OF PROPERTIES OF EA

.00087 *TEMP. (C.) DETERMINED DVER DN: DENSITY# 1.0675 -REFERENCE: CWLR 2346 DINSITY: G/ML) - 1.0:50 WAS CALCULATED FROM THE EQUATION: DENSITY= The tempehature range 25.0 to 50.0 deg. Cent. Reference: C

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 99.3 THE FOLLOWING ANTOINE CONSTANTS(EATH 4491): As --83209, B: -187.39, C= remperature range 25.0 to 50.0 deg. Cent. Reference: CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY

34.017 VISCOSITY(CENTISTOKES) .

ZHURN. FIZ KHIM. 37. 201 (1963)

PASE NUMBER B-176

RNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST BOILING POINT. THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: CWLR 2346 . O DEGREES CENTIGRADE **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULAN BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMMOUND A 269.3 FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA

CONTROL SALESSAN PROGRAMMENT

.00087 *TEMP.(C.) DETERMINED OVER DENSITY (G/ML) =

DATA TO ESTIMATE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 1.0675 WAS CALCULATED FROM THE EQUATION: DENSITY: 1.0675 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 THE TEMPERATURE RANGE

RANGE

DETERMINED OVER THE 99.3 -187.39, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -.83209, B= -187. PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

TEMPERATURE RANGE 25.0 TO 50.0 DI WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

ZHURN. FIZ KHIM. 37. 20'(1963) REFRACE.

THE FOLLOWING CRITICAL PROPERTIES WENT DENSITY TEMPERATURE VOLUME PRESSURE

ONLY DEG TO CC/MOLE ATM.

3305 463.50 814.71 19.38

DIFUSION COEF. = .029 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

DIFUSION COEF. = .029 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.79-03 CENTIPOISE

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.79-03 CENTIPOISE

THOUGH TO DEGREES C. PAGE NUMP

201 (1963)

37.

ZHURN. FIZ KHIM.

BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****
**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS CUMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL COMMON NAME: VG FORWULA WEIGHT: 269.3 GENERAL REFERENCE: CWLR 2346 WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 20.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

.00087 *TEMP.(C.) DETERMINED OVER 1.0675 -REFERENCE: CWLR 2346 DENSITYIG/ML) = 1.0500 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C

RANGE * * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE DETERMINED OVER THE 99.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -.83209, B= -187.39, C* PFRATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346

5.483 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 5.4 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: CWLR 2346 REFERENCE: CWLR 2346 31.0 AT 25.0 DEG. CENT. 25.0 DEG. CENT. STRFACE TENSION (DYNES/CM) * RCFRACTIVE INDEX(ND) * 1.4658 AT

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 814.71 463.50 3305

19.38

PAGE NUMBER

Appendix B

UNCL

206

TO ESTIMATE ****

.00087 *TEMP.(C.) DETERMINED OVER DENSITY G/ML) = 1.0.156 MAS CALCULATED FROM FHE EQUATION: DENSITY = 1.0675 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346 DENSITY (G/ML) =

DETERMINED OVER THE 99.3 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -.83209, Bs -187.39, Cs TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) * 4.740

REFERENCE: CWLR 2348 31.0 AT 25.0 DEG. CENT. 25.0 DEG. CENT. SURFACE TENSION (DYNES/CM) = REFRACTIVE INDEX(ND) = 1.4658 AT

뿔

ZHURN. FIZ KHIM. 37. 201(1963)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DEMSITY TEMPERATURE VOLUME PRESSURE GW/CC DEG C CC/MOLE ATM. .3305 463.50 814.71 19.38

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF.

STHE VISCOSITY OF THE VAPOR WAS ESTINATED USING THE ABOVE CRITICAL PROPERTIES AND THE SMODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.31-03 CENTIPOISE END OF COMPOUND EA 1508 AT 25.0 DEGREES C. PAGE

PAGE NUMBER 8-179

Appendix B

* * * * *

207

PAGE NUMBER B-180

ပ

40.0 DEGREES

4

COMMON NAME: VG FORMULA WEIGHT: 269.3

GENERAL REFERENCE: CWLR 2346

COMMON NAME: VG FORMULA WEIGHT: 269.3

GENERAL REFERENCE: CWLR 2346

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL 40.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES

.00087 *TEMP.(C.) DETERMINED DVER DENSITY(G/ML)= 1.0325 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0675 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

DETERMINED OVER THE

99.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.83209, B= -187.39, C= ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346 TEMPERATURE RANGE 25.0 TO 50.0 DI WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= REFERENCE: CWLR 2346 REFERENCE: CWLR 2346 31.0 AT 25.0 DEG. CENT. 25.0 DEG. CENT. 1.4658 AT SURFACE TENSION (DYNES/CM) REFRACTIVE INDEX(ND)= 1.40 ZHURN. FIZ KHIM. 37. 201 (1963)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. .3305 463.50 814.71 19.38

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.62-03 CENTIPOISE CM.SQ./SEC CALCULATED FOR VAPOR IN AIR S MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1508 .039 DIFFUSION COEF.

E UNCL 208

ZHURN. FIZ KHIM. 37. 201(1963)

REFERENCE: CWLR 2346

***** WARHING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
ANTHING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT AND NOT MEANINGFUL .00072 *TEMP.(C.) DETERMINED OVER -40.0 DEGREES CENTIGRADE 1.0411 -REFERENCE: CWLR 2346 1.0699 WAS CALCULATED FROM THE EQUATION: DENSITY* RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C SUMWARY OF PROPERTIES OF EA DENSITY(G/ML)=

DETERMINED OVER THE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 78.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.26010, B= -282.4%, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

VISCOSITY(CENTISTOKES) = +******** WERE USED TO CALCULATE THE VISCOSITY TERIPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

25.0 DEG. CENT. 30.4 AT SURFACE TENSION (DYNES/CM) . FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE Ħ

ATM. CC/MOLE DENSITY TEMPERATURE VOLUME GA/CC DEG C CC/MOLE 949.16 573.99 3132

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

DIFFUSION COEF. = .018 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23 (1944) VISCOSITY OF VAPOR = 3.39-03 CENTIPOISE

END OF COMPOUND EA 1511 AT -40.0 DEGREES C.

PAGE NUMBER 8-181

THE TEMPERATURE RANGE

ZHURN. FIZ KHIM. 37. 201(1963)

**** WARNING: SINCE THERE IS NO MELING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOSIS TO SPECIFIED FEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

-20.0 DEGREES CENTIGRADE

SUMMARY OF PROPERTIES OF EA

A. P. S. S. S. S. S. S.

STATE OF THE PARTY OF THE PARTY

PARTICIPATION CONTRACTOR

はないないない 一大きない

.00072 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0555 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 - THE TEMPERATURE RANCE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346

RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 78.4 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.26010, B= -282.45, C* TEMPERATUPE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE THE YISCOSITY

3763.170 VISCOSITY (CENTISTOKES). **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR 2346 25.0 DEG. CENT. 30.4 AT SURFACE TENSION (DYNES/CM) =

FULCWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GAY.CC DEG.C CC/MOLE ATM. UNCL/

573.99 3132

DIFFUSION COEF. = .022 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 3.76-03 CENTIPOISE

THE VAPOR = 3.76-03 CENTIPOISE

THE VISCOSITY OF VAPOR = 3.76-03 CENTIPOISE

THE VAPOR = 3.76-03 CENT

PAGE NUMBER B-182

ZHURN. FIZ KHIM. 37. 201(1963)

***** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALIO UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

A BOILING POINT AND NOT MEANINGFUL . O DEGREES CENTIGRADE 151 SUMJARY OF PROPERTIES OF EA

STATES SOUTH STATES

The state of the

Sept.

DENSITY(G/ML)= 1.0411 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0411 -The temperature range 25.0 to 50.0 deg. cent. Reference: CWLR 2346

.00072 *TEMP.(C.) DETERMINED OVER

1

DETERMINED OVER THE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 78.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.26010, B= -282.45, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2348

TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 219.8

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR 2346 25.0 DEG. CENT.

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. SURFACE TENSION (DYNES/CM) = 30.4 AT 25.6

N THE FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USI
OFNSITY TEMPERATURE VOLUME PRESSURE
CA/CC DEG C CC/MOLE ATM.
3132 573.99 949.16 19.13

DIFFUSION COEF. = .026 CM.SQ./SEC CALCULATED

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) V

END DF CANTER THE VERY OF THE VAPOR WAS ESTIMATED USING THE ABOV

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.12-03 CENTIPOISE

.O DEGREES C. ۲

PAGE NUMBER 8-183

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 20.0 DEGREES CENTIGRADE BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** A 1511 AT 20.0 DEGR FORMULA MEIGHT: 297.3 SUMMARY OF PROPERTIES OF EA

The state of the s

The second

The state of the

The same of the same

.00072 *TEMP.(C.) DETERMINED OVER 1.0267 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0411 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 THE TEMPERATURE RANGE DENSITY(G/ML)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

D'TERMINED OVER THE 78.4 THE FULLOWING ANTUINE CCNSTANTS(EATR 4491): A* -1.26010, B= -282.45, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY 40.742 VISCOSITY (CENTISTOKES) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: CWLR 2346 25.0 DEG. CENT 30.4 AT SURFACE TENSION (OYNES/CM) = ZHURN. FIZ KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE

CC/NOLE DENSITY TEMPERATURE VOLUME 949.16 573.99 . 3132 CM/CC MCL/

VISCOSITY OF VAPOR # 4.49-03 CENTIPOISE .030 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF .. =

PAGE NUMBER B-: 84

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00072 +TEMP.(C.) DETERMINED OVER **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS CORFOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: CHIR 2346 25.0 DEGREES CENTIGRADE DENSITY(G/ML) = 1.0231 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 = THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 FORMULA WEIGHT: 297.3 SUNTIARY OF PROPERTIES OF EA

DETERMINED OVER THE 78.4 FOLLOWING ANTUINE CONSTANTS(EATR 4491): A= -1.26010, B= -282.45, C= perature range 25.0 to 50.0 deg. Cent. Reference:cwlr 2346 -1.26010, B= TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 29.5

29.589

25.0 DEG. CENT 30.4 AT SURFACE TENSION (DYNES/CM)

REFERENCE: CWLR 2348

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE Ga/CC .3132 뿔

19.13 CC/NOLE 949.16 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR - 4.58-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

PAGE NUMBER 8-185

25.0 DEGREES

¥

151

END OF COMPOUND EA

ZHURN. FIZ KHIM. 37. 201 (1963)

UNCLASSIFIED

COMMON NAME: VP FORMULA WEIGHT: 297.3 GENERAL REFERENCE: CWLR 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL 40.0 DEGREES CENTIGRADE 1511 SUMMARY OF PROPERTIES OF EA

.00072 +TEMP. (C.) DETERMINED DVER ı REFERENCE: CWLR 2346 1.0411 DENSITY(G/ML) = 1.0123 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C

DETERMINED OVER THE

78.4 IS(EATR 4491): A= -1.26010, B= -282.45, C= 50.0 DEG. CENT. REFERENCE:CWLR 2346 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 13.343 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= TEMPERATURE RANGE

REFERENCE: CWLR 2346 25.0 DEG. CENT. 30.4 AT SURFACE TENSION (DYNES/CM)

ZHURN. FIZ KHIM. 37. 201(1953) THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE STAND THE STAND THE PROPERTIES AND THE PRO

PAGE NUMBER B-106

-40.0 DEGREES CENTIGRADE 1517 PROPERTIES OF EA SUNTIARY

DATA TO ESTIMATE ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALLD UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BUILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00066 *TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0739 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED CYER THE 98.3 ů FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.92983, B= -205.35, ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 TEMPERATURE RANGE

391.193 MERE USED TO CALCULATE THE VISCOSITY VISCOSI IY (CENTISTOKES) .

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR 2348 **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0895*TEMP.(C.) 50.0 DEG. CENT. 35.4 DYNES/CM 25.0 TO 31.8000 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION (DYNES/CM)=

REFERENCE: CWLR2346 157.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)=

ZHURN. FIZ KHIM. 37. 231(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE ATH. CC/NOLE DENSITY TEMPERATURE VOLUME 785.61 457.93 3224 0:1/cc ≝ \SSI

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .021 DIFFUSION COEF.

WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 3.96-03 CENTIPOISE ABOVE CRITICAL THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23 (1944) ED

-40.0 DEGREES 4 END OF COMPOUND EA 1517

PAGE NUMBER 8-187

표

Appendix B

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** WARNING: SINCE THERE IS NO BGILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: CWLR 2346 -20.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

MANAGO BEESTES MANAGO MANAGO

Salan Salan

Townson in the

.00086 +TEMP. (C.) DETERMINED OVER REFERENCE: CWLR 2346 DENSITYIG/ML) = 1.0567 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2340

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 96.3 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -.92983, B. -205.35, TEMFERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) = 49.286

DATA TEMPERATURE RANGE THE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT OF

REFERENCE: CWLR 2346 .0895*TEMP. (C.) 50.0 DEG. CENT. 25.0 10 31.8000 EQUATION: SURFACE TENSION(DYNES/CM)= 31.18
DETERMINED OVER THE TEMPERATURE RANGE 25
WERE USED TO CALCULATE THE SURFACE TENSION

WERE USED TO CALCULATE THE SURFACE TENSION 33.6 DYNES/CM

REFERENCE: CWLR2346

157.0

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) .

ZHURN. FIZ KHTM. 37. 201 (1963) PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. S VOLUME PRESSURE FOLLOWING CRITICAL P DENSITY TEMPERATURE

ATM. CC/MOLE 457.93 . 3224

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .025 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.37-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

-20.0 DEGREES

۲

1517

END OF COMPOUND EA

PAGE NUMBER B-188

Appendix B

ASSIFIED

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00086 *TEMP.(C.) DETERMINED OVER .0 DEGREES CENTIGRADE DENSITY(G/3.4) = 1.0395 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C 1517 DENSITY(G/%.L)=

OF THE DATA TEMPERATURE RANGE ***** REFERENCE: CWLR 2346 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

FOLLOWING ANTOINE CONSTANTS(EATR 4491): A# -.92983, B= -205.35, C* PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 14.426 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) = 14.4

DETERMINED OVER THE

98.3

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR 2346 WERE USED TO CALCULATE THE SURFACE TENSION 31.8 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0895*TEMP.(C.) 50.0 DEG. CENT. 25.0 TO 31.8000 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION CYNES/CM) =

REFERENCE: CWLR2346 157.0 AN-YOUNG(CENTIGRADE) . FLASH POINT, MCC!"

ZHURN. FIZ KHIM. 37. PROPERILES WERE ESTIMATE USING THE METHOD OF FILIPPOV. PRESSURE VOLUME CC/MOLE DENSITY TEMPERATURE FOLLOWING CRITICAL 꾸

CN.SQ./SEC CALCULATED FOR VAPOR IN AIR

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.78-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

.0 DEGREES 7 1517 END OF COMPOUND, EA

PAGE NUMBER 8-189

ZHURN. F1Z KHIM. 37. 201 (1963)

DATA TO ESTIMATE ** WARNING: SINCE THERE IS NO MELTING PDINT FOR THIS COMPOUND, CALCULATION DF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00086 *TEMP.(C.) DETERMINED OVER DETERMINED OVER THE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 20.0 DEGREES CENTIGRADE DENSITY(G/ML) = 1.0223 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 98.3 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -.92983, 8* -205.35, C* TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 6.397 SUMMARY OF PROPERTIES OF EA **** MARNING:

となる。これである。

Section 1

Sales Sales

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT OF THE DATA TEMPERATURE RANGE .0895*TEMP.(C.) 50.0 DEG. CENT. 30.0 DYNES/CM 31.8000 -25.0 10 EQUATION: SURFACE TENSION(DYNES/CM) = 31.

DETERMINED OVER THE TEMPERATURE RANGE 25

WERE USED TO CALCULATE THE SURFACE TENSION ፗ

FLASH PDINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 157.0 REFERENCE: CWLR2346

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DEHSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 포

19.94

785.61

457.93

. 3224

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOPILY OF VAPOR = 5.20-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM, 48,23(1944) MODIFIED SUTHERLANDS

PAGE NUMBER 8-190

ပဲ

20.0 DEGREES

۲

1517

END OF COMPOUND EA

ZHURN. FIZ KHIM. 37. 201(1963)

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNIESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****
**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00086 *TEMP.(C.) DETERMINED OVER DETERMINED OVER THE 25.0 DEGREES CENTIGRADE DENSITY(G/ML) = 1.0180 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 98.3 IS(EATR 4491): A= -.92983, B= -205.35, C= 50.0 DEG. CENT. REFERENCE:CWLR 2346 1517 OF PROPERTIES OF EA FULLOWING ANTOINE CONSTANTS (EATR 4491): Am TEMPERATURE RANGE 25.0 TO 50.0 DI WERE USED TO CALCULATE THE VISCOSITY SUMMARY

REFERENCE: CWLR 2346 REFERENCE: CWLR2346 .0895*TEMP.(C.) 50.0 DEG. CENT. R 29.6 DYNES/CM 31.8000 -25.0 TO 157.0 WERE USED TO CALCULATE THE SURFACE TENSION FLASH PUINT, MCCUTCHAN-YOUNG(CENTIGRADE)= SQUATION: SURFACE TENSION(DYNES/CM)= DETERMINED OVER THE TEMPERATURE RANGE 빞

5.440

VISCOSITY(CENTISTOKES) *

THE FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Z

DCNSITY TEMPERATURE VOLUME PRESSURE.

GN/CC DEG C CC/MOLE ATM.

3224 457.93 785.61 19.94

DIFFUSION COEF. = .036 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

DIFFUSION COEF. = .036 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.30-03 C

END OF COMPOUND EA 1517 AT 25.0 DEGREES C.

PAGE NUMBER

CENTIPOISE

ZHURN. FIZ KHIM. 37. 201(1963)

DATA TO ESTIMATE ** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFFRENCE: CWLR 2346 40.0 DEGREES CENTICRADE FORMULA WEIGHT: 253.3 1517 SUMMARY OF PROPERTIES OF EA :5NINBER ****

.00086 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0051 WAS CALCULATED.FROM THE EQUATION: DENSITY = 1.0395 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 DENSITY(G/ML)=

DETERMINED OVER THE **98**.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* - 92983, B= -205.35, C* ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= TEMPERATURE RANGE

REFERENCE: CWLR 2346 REFERENCE: CWLR2346 .0895*TEMP.(C.) 50.0 DEG. CENT. R 28.2 DYNES/CM 31.8000 -25.0 TG 157.0 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION FLASH POINT, MCCUTCHAN-YOURG (CENTIGRADE) = EQUATION: SURFACE TENSION (PYNES/CM)= THE

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. VOLUME CC/MOLE PENSITY TEMPERATURE Ή. Ή

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION COEF. Ŧ

40.0 DEGREES C: ¥ 1517 END OF COMPOUND EA

PAGE NUMBER B-192

Appendix B

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

ZHURN. FIZ KHIM. 37. 201(1963)

-40.0 DEGREES CENTIGRADE 1576

FORTIULA

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALUE UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

.00085 *TEMP.(C.) DETERMINED OVER 1.1042 -REFERENCE: CWLR 2346 1.1383 WAS CALCULATED FROM THE EQUATION: DENSITY# RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C THE TEMPERATURE RANGE

OF THE DATA TEMPERATURE RANGE THE ABOVE VALUES ARE EXTRAPOLATED OUT WARNING: DETERMINED OVER THE 84.0 150.0 DEG. CENT. REFERENCE: CWLR 2346

76612.679 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

25.0 DEG. CENT. 32.4 AT SURFACE TENSION (DYNES/CM)

REFERENCE: CWLR 2346

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. J.HE

PRESSURE CC/MOLE 893.65 VOLUME DENSITY TEMPERATURE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 910. DIFFUSION COEF.

CENTIPOISE PROPERTIES AND THE VISCOSITY OF VAPOR = 3.80-03 ABOVE CRITICAL THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48.23(1944)

PAGE NUMBER 8-193

-40.0 DEGREES C.

۲

1576

END OF COMPOUND EA

ZHURN. FIZ KHIM. 37. 201 (1963)

-20.0 DEGREES CENTIGRADE SUMJARY OF PROPERTIES OF EA

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00085 *TEMP.(C.) DETERMINED DYER DENSITY(G/ML) = 1.1212 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1042 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

OF THE DATA TEMPERATURE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT DETERMINED OVER THE 84.0 -259.43, C= 50.0 DEG. CENT. REFERENCE: CWLR 2346 FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -1.01294, B= TEMPERATURE RANGE

1099.475 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: CWLR 2346 25.0 DEG. CENT 32.4 AT SURFACE TENSION (DYNES/CM) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE CC/MOLE 899.65 VOLUME DENSITY TEMPERATURE .3382 پ NCL

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .023 DIFFUSION COEF. = THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 4.20-03 CENTIPOISE

۲

END DF COMPOUND EA 1576

PAGE NUMBER 8-194 -20.0 DEGREES C.

Appendix B

SSI 222

ZHURN. FIZ KHIM. 37. 201 (1963)

GENERAL REFERENCE: CMIR 2345 . O DEGREES CENTIGRADE 304.3 FORMULA WEIGHT: 1576 SUMMARY OF PROPERTIES OF EA COMMON NAME:

へいく 一人 こうしゅう

** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00095 *TEMP.(C.) DETERMINED OVER 1.1042 -DENSITYIG/ML)= 1.1042 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1042 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2348

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 84.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As -1.01294, Bs -259.43, Cs temperature range 25.0 to 50.0 deg. Cent. Reference: CWLR 2348 vere used to calculate the viscosity 119.077

RANGE OF THE DATA TEMPERATURE *** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

VISCOSI FY (CENTISTOKES)=

REFERENCE: CWLR 2346 25.0 DEG. CENT. 32.4 AT SURFACE TENSION (DYNES/CM) =

DIFFUSION COEF. = .027 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

SS THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.61-03 CENTIPOISE

END OF COMPOUND EA 1576 AT A COMPOUND EA 1576 FOLLOWING CRITICAL FROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE YOLUME PRESSURE GM/CC DEG C CC/MOLE ATM.

PAGE NUMBER 8-195

ZHURN. F12 KHIM. 37. 201(1963)

** WARNING: SINCE THERE IS NO MELTING PO CONTINUED CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SPECTORS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO LOLLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT AND NOT MEANINGFUL .00085 +TEMP.(C.) DETERMINED OVER GENERAL REFERENCE: CWIR 2346 20.0 DEGREES CENTIGRADE DENSITY(G/ML) = 1.0972 MAS CALCULATED FROM THE EQUATION: DENSITY 1.1042 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG, CENT. REFERENCE: CMLR 2346 304.3 WEIGHT: er. i SUMMARY OF PROPERTIES OF COMMON NAME:

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 84.0 -1.01294, B= -259.43, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.01294, B= -259. TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 30.324 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTONES) = 30.3

DETERMINED OVER THE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: CWLR 2346 25.0 DEG. CENT. 32.4 AT SURFACE TENSION (DYNES/CIA) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE DENSITY TEMPERATURE VOLUME 7E

ATM. 18.44 CC/MOLE 899.65 500.99 .3382 22/119

CM.SO./SEC CALCULATED FOR VAPOR IN AIR .031 DIFFUSION COEF.

VISCOSITY OF VAPOR = 5.01-03 CENTIPOISE PROPERTIES AND THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) THE VISCOSITY OF THE

PAGE NUMBER 8-196

20.0 DEGREES C.

۲

1576

END OF COMPOUND EA

DATA TO ESTIMATE ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST.

A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00085 +TEMP.(C.) DETERMINED DVER GENERAL REFERENCE: CWLR 2346 DETERMINED OVER THE REFERENCE: CWLR 2346 25.0 DEGREES CENTIGRADE DENSITYIG/ML) = 1.0929 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1042 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 84.0 THE FULLOWING ANTUINE CONSTANTS(EATR 4491): A= -1.01294, B= -259.43, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2348 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 23.299 304.3 1 1576 AT 25. FORMULA WEIGHT: 25.0 DEG. CENT. 1576 PROPERTIES OF EA 32.4 AT COMMON NAME: SURFACE TENSION (DYNES/CM) SUMPARY

CASSES CREEKS CALCEL MACCING CASTES TOWN INTO

destable when the

ZHURN. FIZ KHIM. 37. 201(1963) ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 5.11-03 CENTIPOISE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. CM-SQ./SEC CALCULATED FOR VAPOR IN AIR DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM.
3382 500.99 899.65 18.44

DIFFUSION COEF. = .033 CM.SQ./SEC CALCULAT
THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ADDIFIED SUTHERLANDS EQ., J.PHY.CHEM,46,23(1944)

END OF COMPOUND EA 1576 A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE A

THE VI VAPOR WAS ESTIMATED USING THE PRESSURE VOLUME DENSITY TEMPERATURE

B-197 PAGE NUMBER

25.0 DEGREES C.

¥

END OF COMPOUND EA 1576

TE

PAGE NUMBER 8-198

DATA TO ESTIMATE ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: CNLR 2346 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 304.3 9 SUMMARY OF PROPERTIES COMMON NAME:

.60085 *TEMP.(C.) DETERMINED OVER DENSITY (G/ML) = 1.0701 WAS CALCULATED FROM THE EQUATION: DENSIT# 1.1042 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

DETERMINED OVER THE 84.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.01294, B= -259.43, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY

12.006 VISCOSITY(CENTISTOKES)=

REFERENCE: CWLR 2346 CENT. 25.0 DEG. 32.4 AT SURFACE TENSION (DYNES/CM)

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE TE

ZHURN. FIZ KHIR. 37. 201 (1963)

ATM. DENSITY TEMPERATURE VOLUME GW/CC DEG C CC/MOLE 3382 500.99 899.65 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF. =

ABGVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.41-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE SMODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

S

END OF COMPOUND EA 1576

40.0 DEGREES C. ¥

Appendix B

ZHURN. FIZ KHIM. 37. 201 (1963)

** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL -40.0 DEGREES CENTIGRADE 1622 SUNTARY OF PROPERTIES OF EA

.00092 *TEMP.(C.) DETERMINED DVER DENSITY(G/ML) = 1.0829 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0461 - THE TEMPERATURE RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: CMLR 2346 REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 100.8 -227.26, C= 50.0 DEG. CENT. REFERENCE: CWLR2346 -1.02159, B= FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= WERE USED TO CALCULATE THE VISCOSITY 25.0 10 TEMPERATURE RANGE

522.261 VISCOSI IY (CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

PEFERENCE: CWLR 2348 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0689+TEMP.(C.) 50.0 DEG. CENT. 34.3 DYNES/CM 31,5000 -25.0 TO DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TEMSION EGUATION: SURFACE TENSION(DYNES/CM)= 봈

THE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATH. CC/NOLE VOLUME 421.97 3283 GIA/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .021 DIFFUSION COEF.

VISCOSITY OF VAPOR # 4.15-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE WODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) PAGE NUMBER 8-199

-40.0 DEGREES C.

۲

1622

END OF CCYPOUND EA

SUMMARY OF PROPERTIES OF EA 1622 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

*** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF "ALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

A BOILING FOINT AND NOT MEANINGFUL **** MARNING: SINCE

AREA TRANSPORT AREAS TRANSPORT AREAS TO THE

1.18.16

OVER .00092 +TEMP.(C.) DETERMINED ł DENSITY(G/ML) = 1.0845 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

REFERENCE: CWLR 2346

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 100.8 -227.26, C= THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.02159, B= -227 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR2346 WEPE USED TO CALCULATE THE VISCOSITY 61.941

THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF

EQUATION: SURFACE TENSION(DYNES/CM)= 31.5000 - .0689*TLMP.(C.)
DETERMINED GVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 32.9 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 王

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. . 3283 421.97 771.53 19.31 뿚

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .026 DIFFUSION COEF. = ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 4.58-03 CENTIPGISE THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEN.48,23(1944)

NUMBER PAGE

ပ

-20.0 DEGREES

¥

1622

END OF COMPOUND EA

ASSIFIED

. O DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BL VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

A BOILING POINT, THE VALUES CALCULATED ABOVE THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00092 *TEMP.(C.) DETERMINED OVER 1.0461 -REFERENCE: CWLR 2346 DENSITY(G/ML) = 1.0461 WAS CALCULATED FROM THE EQUATION: DENSITY = THE TEMPERATURE RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: C

OF THE DATA TEMPERATURE RANGE * . * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 100.8 TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES)= 17.123

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

.0689*TEMP.(C.) 50.0 DEG. CENT. R 31.5000 EQUATION: SURFACE TENSION(DYNES/CM)* 발 드 SSI

**** RANGE DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE USED TO CALCULATE THE SURFACE TENSION 31.5 DYNES/CM **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE SIGNICE DEG C CC/MÔLE ATM. ED

771.53 421.97 3283 CM.SQ./SEC CALCULATED FUR VAPOR IN AIR .030 DIFFUSION COEF.

VISCOSITY OF VAPOR # 5.01-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHEALANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.01-03 (

.O DEGREES ¥ 1622 END OF COMPOUND EA

ن

PAGE NUMBER B-201

***** WARNING: SINCE THERE IS NO WELTING FOINT FOR THIS COMPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

GE VALID UNIESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO WADOR PRESSURE DATA TO ESTIMATE

A BOILING POINT. THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL 20.0 DEGREES CENTIGRADE 1.0461 -1.0277 WAS CALCULATED FROM THE EQUATION: DENSITY* 1622 SUMMARY OF PROPERTIES OF EA F (TW/5) ALISNUC

.00092 *TEMP. (C.) DETERMINED REFERENCE: CWLR 2346 50.0 DEG. CENT. 25.0 10 THE TEMPERATURE RANGE

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

100.8 ö FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.02159, 8= -227.26, 50.0 DEG. CENT. REFERENCE: CWLR2346 7.247 THE FOLLOWING ANTOINE CONSTANTS (EATR DIEMPERATURE RANGE 25.0 10 50.0 DE CONSTANTS (EATR DEED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

DETERMINED OVER THE

OF THE DATA TEMPERATURE RANGE ***** THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR 2346 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT, REFERENCE: CWL WERE USED TO CALCULATE THE SURFACE TENSION 30.1 DYNES/CM **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0568+TEMP. (C.) 31.5000 EGUATION: SURFACE TENSION(DYNES/CM)*

ZHURN. FIZ KHIM. 37. 201 (1963) PAGPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. FILEDWING CRITICAL PROPERTIE 포

SCK/SS 771.53 421.37 3283

CM.SO./SEC CALCULATED FOR VAPOR IN AIR . 035 DIFFUSION COEF.

VISCOSITY OF VAPOR . 5.44-03 CENTIPOISE PROPERTIES AND THE THE VISCOSITY OF THE VANOR WAS ESTIMATED USING THE ABOVE CRITICAL MOCIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

20.0 DEGREES C. 1622 AT END OF COMPOUND EA

PAGE NUMBER B-202

Appendix B

SSIFIED

ZHURN. FIZ KHIM. 37. 201(1363)

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: CWLR 2346 25.0 DEGREES CENTIGRADE 253.3 FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA COMMION NAME:

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00092 +TEMP.(C.) DETERMINED OVER ı REFERENCE: CWLR 2346 1.0231 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.0461 RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2348 TEMPERATURE RANGE = (1%/0) LISU-0

DETERMINED OVER THE 100.8 -1.02159, B= -227.26, C= FGLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.02159, B= -227 PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR2346 E JSED TO CALCULATE THE VISCOSITY 6,100 VISCOSITY (CENTISTOKES)= FEMPERATURE RANGE MERRI

REFERENCE: CWLR 2346 .0689*TEMP.(C.) 50.0 DEG. CENT. R 29.8 DYNES/CM 31.5000 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM) = 31, DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE

THE FULLUMING CRITICAL PROSENTES WERE ESTIMATED TO THE COLUME PRESSURE CANCE DEG C CC/MOLE ATM. 15283 421.97 771.53. 19.31

 ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.55-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) PAGE NUMBER B-203

25.0 DEGREES

¥

1622

END OF COMPOUND EA

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
MARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00092 *TEMP. (C.) DETERMINED OVER ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 40.0 DEGREES CENTIGRADE ŧ DENSITY(G/ML)= 1.0093 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0461 -The temperature range 25.0 to 50.0 deg. cent. Reference: CWLR 2346 SUMMARY OF PROPERTIES OF EA

REFERENCE: CWLR 2346 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.02159, B= -227.26, C= 100.8 perature range 25.0 to 50.0 deg. cent. Reference: CWLR2346 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 3.5 黑 뿔

DETERMINED OVER THE

. .0689*TEMP.(C.) 50.0 DEG. CENT. R 28.7 DYNES/CM 31.5000 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM)* 31. DETERMINED OVER THE TEMPERATURE RANGE 2: WERE USED TO CALCULATE THE SURFACE TENSION FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE YOLUME PRESSURE GA/CC DEG C CC/MOLE ATM. .3283 421.97 771.53 19.31 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 421.97

.041

DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.87-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

PAGE NUMBER 8-204

ပ

40.0 DEGREES

¥

END OF COMPOUND EA 1622

SSIFIED

RNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT AND NOT MEANINGFUL -40.0 DEGREES CENTIGRADE 1664 SUMMARY OF PROPERTIES OF EA

.00086. +TEMP. (C.) DETERMINED OVER ŧ VAPOR PHESSURE(TORR)= .21-02 AT 25.0 DEG. CENT. REFERÊNCE: Density(G/ML)= 1.0840 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 The temperature range 25.0 to 50.0 deg. Cent. Reference: CWLR 2346

REFERENCE: CHLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 106.2 <u>.</u> -1.01361, 8= -232.85, TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY FOLLOWING ANTOINE CONSTANTS(EATR 4491): A-

318.945 VISCOSITY(CENTISTOKES)= **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** REFERENCE: CWLR2346 .1063+TEMP.(C.) 50.0 DEG. CENT. 38.2 DYNES/CM 33.9315 -25.0 TO WERE USED TO CALCULATE THE SURFACE TENSION DETERMINED OVER THE TEMPERATURE RANGE EQUATION: SURFACE TENSION(DYNES/CM)=

REFERENCE: NB 4612 P 236.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure

ATK. CC/MOLE .3252 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .022 DIFFUSION COEF.

VISCOSITY OF VAPOR * 4.00-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CMEM,48,23(1944)

-40.0 DEGREES C. AT 1664 END OF COMPOUND EA

PAGE NUMBER B-205

FIED I

COMMON NAME: VM FORMULA WEIGHT: 239.3 GENERAL REFERENCE: CWIR 2346

**** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE

A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL -20.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

.00086 *TEMP.(C.) DETERMINED OVER ł VAPOR PRESSURE(TORR)= .21-02 AT 25.0 DEG. CENT. REFERENCE: Density(G/ML)= 1.0G68 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

* * * * *+*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE -232.85, C= 106.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.01361, B= -232.0 Perature range 25.0 to 50.0 deg. cent. Reference:cwlr 2346. TEMPERATURE RANGE

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 48.714

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR2346 ***** MARGING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE **** . 1063+TEMP.(C.) 50.0 DEG. CENT. R 36.1 DYNES/CM DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO WERE USED TO CALCULATE THE SURFACE TENSION 33.9315 EQUATION: SURFACE TENSION(DYNES/CM)= 뿚

REFERENCE: NB 4612 P 79 236.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) ..

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. CC/MOLE DENSITY TEMPERATURE VOLUME SM/CC Ŧ

ZHURN. F12 KHIM. 37. 201 (1963)

 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

END OF CCMPOUND EA 1664 AT -20.0 DEGREES C.

PAGE NUMBER B-206

Appendix B

UNCLASSIFIE

ZHURN. F1Z KHIM. 37. 201(1963)

THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE ABOVE BOILING POINT AND NOT MEANINGFUL NOT RNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA CMLR 2346 GENERAL REFERENCE: . O DEGREES CENTIGRADE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE FORMULA WEIGHT: 239.3 SUMMARY OF PROPERTIES COMMON NAME: **** WARNING:

.00086 +TEMP.(C.) DETERMINED OVER .21-02 AT 25.0 DEG. CENT. REFERENCE: MAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 25.0 TO 50.0 DEG. CENT. PETETTION VAPOR PRESSURE (TORR)= 1.0495 DENSITY(G/ML)=

RANGE **** THE DATA TEMPERATURE REFERENCE: CMLR 2346 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE TEMPERATURE RANGE

DETERMINED OVER THE 106.2 ů CONSTANTS(EATR 4481): A= -1.01361, B= -232.85, 5.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 15.099 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= ANTOINE POLLOWING

THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF

REFERENCE: CWLR2346 **** OF THE DATA TEMPERATURE RANGE .1063*TEMP.(C.) 50.0 DEG. CENT. R 33.9 DYNES/CM 5 33.9315 -25.0 TO ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DETERMINED OVER THE TEMPERATURE RANGE. 25 WERE USED TO CALCULATE THE SURFACE TENSION SURFACE TENSION (DYNES/CM)* EOUATION: 王

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = .236.0 REFERENCE: NB 4612 P

WERE ESTIMATED USING THE METHOD OF FILIPPOV Ŋ PRESSURE FULLOWING CRITICAL PROPERTIES VOLUME DENSITY TEMPERATURE Ŧ

GM/CC DEG C CC/MOLE ATM. .3252 461.57 735.94 21.39

DIFFUSION COEF. # .031 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

CENTIPOISE PROPERTIES AND THE VISCOSITY OF VAPOR . 4.84-03 ABOVE CRITICAL ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VAPOR WAS OF THE

END OF COMPOUND EA 1664 AT .0 DEGREES C.

PAGE NUMBER B-207

UNCLASSIFIED

**** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** MARNING: SINCE THERE IS NO WAPOR PRESSURE DATA TO ESTIMATE
**** MARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA AANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: CWLR 2346 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: SURFARRY OF

.00086 *TEMP.(C.) DETERMINED OVER ŧ REFERENCE: CWLR 2346 VAPOR PRESSURE(TORR)= .21-02 AT 25.0 DEG. CENT. REFERENCE: DENSITY(G/ML)= 1.0322 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

RANGE THE DATA TEMPERATURE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF DETERMINED OVER THE 106.2 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.01361, B= -232.85, TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2348 WERE USED TO CALCULATE THE VISCOSITY 6.784 VISCOSITY (CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CHLR2346 Were used to calculate the surface tension 31.8 Dynes/CM ***** Warning: The above values are extrapolated dut of the data temperature bange ***** . 1063+TEMP. (C.) 33.9315 EQUATION: SURFACE TENSION (DYNES/CM) . 776

REFERENCE: NB 4612 P 79 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 236.0

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE FIED

21.39 : VOLUME CC/MOLE 735.94 DENSITY TEMPERATURE GM/CC DEG C

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .037 DIFFUSION COEF.

WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR • 5.26-03 CENTIPOISE ABOVE CRITICAL ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING HEMODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

20.0 DEGREES C. ¥ 1664 END OF COMPOUND EA

PAGE NUMBER 8-208

REFERENCE: CWLR2346

ZHURN. FIZ KHIM. 37. 201 (1963)

DATA TO ESTIMATE WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL COMMON NAME: VM FORMULA WEIGHT: 239.3 GENERAL REFERENCE: CWIR 2346 25.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

.00086 +TEMP.(C.) DETERBINED OVER VAPOR PRESSURE(TORR)= .21-02 AT 25.0 DEG. CENT. REFERENCE: Density(G/ML)= 1.0279 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

DETERMINED OVER THE

-232.85, C= 108.2 TEMPERATURE PANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTORES)= 5.770

H H

REFERENCE: NB 4612 P .1063+TEMP.(C.) 50.0 DEG. CENT. R 31.3 DYNES/CM 33.9315 -25.0 TO 236.0 EDUATION: SURFACE TENSION(DYNES/CM)= 33. DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)*

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILLPPOV. DENSITY TEMPERATURE VOLUME PRESSURE SSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR ATM. CC/MOLE 735.94 461.57 GW/CC

.038

DIFFUSION COEF. .

CENT IPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CATTICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.36-03 (

ပဲ 25.0 DEGREES 4 END OF COMPOUND EA 1664

PAGE NUMBER B-209

ZHURN. FIZ KHIM. 37. 201(1963)

DATA TO ESTIMATE POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST. "ED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ANING: SIM THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID HESS LIQUID SUPERCOOL: TO SPECIFIED TEMPERATURE *****

WARNING: 8 HOE THERE IS NO BOILLM POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO A BOILING HAT, THE VALUES CALCU "ED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANING. GENERAL REFERENCE: CWLR 2346 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 239.3 SUMMARY OF PROPERTIES OF COMMON NAME: MARNING: SIN

.00086 .TEMP. (C.) DETERMINED OVER ŀ REFERENCE: 25.0 DEG. CENT. A .21-02 VAPOR PRESSURE (TORR) =

DETERMINED OVER THE 106.2 1.0150 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 . GE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 CONSTANTS(EATR 4491): A= -1.01361, B= -232.85, C= 5.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 25.0 10 ING ANTOIL DENS1 TY (G/ML) = THE TEMPERATURE TE PANGE TEMPERA ن

. 1063*TEMP. (C.) 33.9315 3.794 HERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 3.7 THE

REFERENCE: CWLR2346 4612 P 50.0 DEG. CENT. 29.7 DYNES/CM REFERENCE: NB 25.0 TO 236.0 EQUATION: SURFACE TENSION(DYNES/CM)= 33.
DETERNINED OVER THE TEMPERATURE RANGE 25
WERE USED TO CALCULATE THE SURFACE TENSION FLASH PUINT, MCCUTCHAN-YOUNG (CENTIGRADE)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure

DENSITY TEMPERATURE VOLUME PRESSURE GN/CC DEG C CC/MOLE ATM. .3252 461.57 735.91 21.39 CM.SQ./SEC CALCULATED FO' VAPOR IN AIR .045 CIFFUSION COEF

VISCOSITY OF VAPOR - 5.68-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) PAGE NUMBER 8-210

ن

40.0 DEGREES

¥

1664

END OF COMPOUND EA

BE VALID UNIESS LIQUID SUPERCOOLS TO PECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .00080 +TEMP. (C.) DETERMINED OVER COMMON NAME: VS FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346 -40.0 DEGREES CENTIGRADE 1677 PROPERTIES SUNTARY OF

1.0533 WAS CALCULATED FROM THE EQUATION: DENSITY: 1.0215 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346 THE TEMPERATURE RANGE DENSITY (G/ML) =

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 83.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -.79135, 8* -190.74, C* PERATURE HANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 TEMPERATURE HANGE

4194.138 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

KEFERENCE: CWLR 2346 OF THE DATA TEMPERATURE RANGE .0837+TEMP.(C.) 50.0 DEG. CENT. 35.6 DYNES/CM 5 25.0 10 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED 32.3000 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TEVSION EQUATION: SURFACE TENSION (DYNES/CM) = THE

REFERENCE: CWLR 2346 168.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)=

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

ATM. E VOLUME CC/MOLE 897.75 494.72 5134

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .019 DIFFUSION COEF.

THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCUSITY OF VAPOR = 3.68-03 CENTIPOISE

ن -40.0 DEGREES ¥ 1677 END OF COMPOUND EA

PAGE NUMBER B-211

Appendix B

FIED NCLASSI 239

**** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE ***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEAMINGFUL GENERAL REFERENCE: CULR 2346

-20.0 LEGREES CENTIGRADE

1677

SUNTARY OF PROPERTIES OF EA

.00080 .TEMP.(C.) DETERMINED DVER DENSITY(G/ML) = 1.0374 MAS CALCULATED FROM THE EQUATION: DENSITY= 1.0215 -- THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

FANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 83.2 -190.74, C= THE FULLOWING ANTOTHE CONSTANTS(EATR 4491): A= -.79135, B= -190. TEMPERATURE NANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE (HE VISCOSITY VISCOSIT/(CENTISTOKES)* 168.294

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CHLR 2348 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMI Were used to calculate the surface temsion 34.0 Dynes/cm ***** Warning: The above values are extrapolated out of the data temperature range .083741EMP.(C.) 32.3000 EQUATION: SURFACE FENSION DYNES/CM) #

REFERENCE: CWLR 2346 168.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)=

FILLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure 王

ZHURH. FIZ KHIM. 37. 201 (1963)

CC/MOLE 434.72 3134 011/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .023 DIFFUSION COEF.

VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.07-03 CENTIPDISE WODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) THE VISCOSITY OF THE

PAGE NUMBER 8-212

-20.0 DEGREES C.

¥

1677

END OF COMPOUND EA

DATA TO ESTIMATE THERE IS NO VAPOR PRESSURE DATA TO EST ABOVE BOILING POINT AND NOT MEANINGFUL ***** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANING .O DEGREES CENTIGRADE

.00080 *TEMP.(C.) DETERMINED QVER ı DENSITY(G/ML)= 1.0215 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0215 - THE TEMPERATURE RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE DATA TEMPERATURE RANGE **** Ö *.*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT DETERMINED OVER THE 83.2 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -.79135, B. -190.74, TENPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY

VISCOSI IY (CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR 2346 EQUATION: SURFACE TENSION(DYNES/CM)* 32,3000 - .0837*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 234|
WERE USED TO CALCULATE THE SURFACE TENSION 32.3 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 뿔

REFERENCE: CWLR 2346 168.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE THE

ZHURN. FIZ KHIM. 37.

CC/MOLE 897.75

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .027 DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 4.46-03 CENTIPOISE VAPOR MAS ESTIMATED USING THE EQ., J.PHY.CHEM.48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

.O DEGREES C. ۲ 1677 END OF COMPOUND EA

PAGE NUMBER 8-213

Appendix B

MARMING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
*** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL 20.0 DEGREES CENTIGRADE 1677 SUMMARY OF PROPERTIES OF EA

.00080 *TEMP.(C.) DETERMINED DVER 1.0215 -REFERENCE: CWLR 2346 DENSITY'G/ML) = 1.0056 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C

RANGE ...** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE DETERMINED OVER THE 83.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79135, B= -190.74, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY 11.394 VISCOSITY (CENTISTOKES)=

OF THE DATA TEMPERATURE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR RANGE OUT OF THE DATA TEMPERATURE . .0837+TEMP.(C.) 50.0 DEG. CENT. R. 30.6 DYNES/CM 32.3000 -25.0 TU DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO WERE USFD TO CALCULATE THE SURFACE TENSION ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED EQUATION: SURFACE TENSION (DYNES/CM) = 17E

FLASH PUINT, MCCUICHAN-YOUNG(CENTIGRADE) = 168.0 REFERENCE: CWLR 2346

FIZ KHIW. ZHURN. FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 王

201 (1963)

37.

DENSITY TEMPERATURE VOLUME ATM.

GENSIA 494.72 897.75 18.23

COEF. # .032 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 4.85-03 CENTIPOISE ABOVE CRITICAL THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPCUND EA 1677. AT 20.0 DEGREES C.

PAGE NUMBER B-214

Appendix B

UNCLASSIFIED

SUMMARY OF PROPERTIES OF EA 1677 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: VS FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346
RNING: SINGE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE "ALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *+***
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00080 .TEMP.(C.) DETERMINED OVER DENSITY(G/ML) = 1.0016 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0215 -REFERENCE: CWLR 2346 50.0 DEG. CENT. 25.0 10 THE TEMPERATURE RANGE

DETERMINED OVER THE

83.2 FULLOWING ANTOINE CONSTANTS(EAFR 4491): A= -.79135, B= -190.74, C= ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 9.360 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE JSEO TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)* 1HE

REFERENCE: CWLR 2346 REFERENCE: CWLR 2346 .0837+TEMP.(C.) 50.0 DEG. CENT. R 30.2 DYNES/CM 32.3000 -25.0 TO EDUATION: SURFACE TENSION(DYNES/CM)= 32.3000 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO
WERE USED TO CALCULATE THE SURFACE TENSION
FLASH POTINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 168.0

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DEVSITY TEMPERATURE VOLUME PRESSURE

ZHURN. FIZ KHIM. 37. 201 (1963)

ATE. 18.33 CC/MOLE 697.75 494.72 .3134 SM/CC 빞

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF. VAFOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.95-03 CENTIPOISE THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING TH MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

ပ 25.0 DEGREES AT 1677 END OF COMPOUND EA

PAGE NUMBER B-215

Appendix B

ZHURN. FIZ KHIM. 37. 201(1963)

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA PANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL COMMON NAME: VS FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWIR 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** 40.0 DEGREES CENTIGRADE 1677 SUMMARY OF PROPERTIES OF EA

.00080 .TEMP.(C.) DETERMINED OVER ١ .9897 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.0215 . ANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 THE TEMPERATURE RANGE DENSITY (G/ML) =

DETERMINED OVER THE 83.2 ů FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79135, B= -190.74, PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 THE FOLLOWING ANTOINE CONSTANTS(EATR TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY

5.711 VISCOSITY(CENTISTUKES)=

REFERENCE: CWLR 2346 .0827*TEMP.(C.) 50.0 DEG. CENT. 29.0 DYNES/CM 25.0 10 32,3000 DETERMINED DVER THE TEMPERATURE RANGE 25 MERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM)=

REFERENCE: CWLR 2346 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 168.0

FOLLOWING CATTICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. 18.33 CC/MOLE 897.75 494.72 0EG C 22/42 3134

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF. ABOVE CRITICAL PROFESTIES AND THE VISCOSITY OF VAPOR * 5.24-03 CENTIPOISE VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM.48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

40.0 DEGREES C.

۲

1677

END OF COMPOUND EA

PAGE NUMBER 8-216

. SSIFIED THE

-40.0 DEGREES CENTIGRADE SUNMARY OF PROPERTIES OF EA

安全というなりがなる。 まための こうじゅう

TO ESTIMATE WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL NAING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY
BE VALID UNIESS LIQUID SUPERCOULS TO SPECIFIED TEMPERATURE ***** :DNINEY: ****

.00087 +TEMP.(C.) DETERMINED DVER 1.1017 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0670 - RANGE 25.0 TO 50.9 DEG. CENT. REFERENCE: CWLR 2346 THE TEMPERATURE RANGE DENSITY(G/ML)=

RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 86.2 C TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 635.686

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMP

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CULR 2346 WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** .0647*TEMP.(C.) 50.0 DEG. CENT. 32.5000 -25.0 10 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION (DYNES/CM) #

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ASSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

CC/MOLE 468.07 02/E5 3299 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .023 DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.06-03

-40.0 DEGREES C. ۲ 1694 END OF COMPOUND EA

PAGE NUMBER B-217

FORMULA WEIGHT: 225.2 OF PROPERTIES OF EA SUMBARY

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: CWLR 2346

.00087 *TEMP. (C.) DETERMINED DVER REFERENCE: CWLR 2346 1.0570 DENSITY(G/ML) = 1.0044 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANCE 25.0 TO 50.0 DEG. CENT. REFERENCE: (

***** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 86.2 -166.71, C≠ FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -.80765, B= -166 ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 TEMPERATURE RANGE 25.0 TO 50.0 DI THE FOLLOWING ANTO

VISCOSITY (CENTISTOKES)=

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR 2346 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2341 WERE USED TO CALCULATE THE SURFACE TENSION 33.8 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** .0647*TEMP.(C.) 32.5600 -25.0 TO SURFACE TENSION (DYNES/CM) = 1 1 1

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE FIED

CC/MOLE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .028 DIFFUSION COEF. WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 4.48-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

-20.0 DEGREES C. A 1694 END OF COMPOUND EA

PAGE NUMBER B-218

ANING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO GENERAL REFERENCE: CWLR 2346 .0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA 1001NEVE + + + + +

を見りていた。

Control of the state of

NO VAPOR PRESSURE DATA TO ESTIMATE WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUI

.00087 *TEMP. (C.) DETERMINED GVER

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 1.0670 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.0670 - RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: CWLR 2346 REFERENCE: CWLR 2346 THE TEMPERATURE RANGE

DINSITY (G/ML) =

DETERMINED OVER THE 86.2 -166.71, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* --80765, B= -166. PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CMLR 2346 MERE USED TO CALCULATE THE VISCOSITY 13.5 TEMPERATURE RANGE 뽀

OF THE DATA TEMPERATURE RANGE * * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT 13.398

REFERENCE: CWLR 2346 DETERNINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL WERE USED TO CALCULATE THE SURFACE TENSION 32.5 DYNES/CM ***** SARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0647 *TEMP.(C.) 32,5000 TENSION (DANES/CM) = EQUATION: SURFACE ≝ SSIF

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. PRESSURE CC/MOLE 682.56 VOLUME DENSITY TEMPERATURE 468.07 D H

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4,91-03 VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TI MODIFIED SUTHERLANDS EQ., J.FHY.CHEM,48,23(1944)

DEGREES ۲ 1694 END OF COMPOUND EA

B-219

PAGE NUMBER

DATA TO ESTIMATE **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: SUMMARY OF PROPERTIES OF MACH MARK

.00087 "TEMP.(C.) DETERMINED REFERENCE: CWLR 2346 1.0670 1.0496 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CI THE TEMPERATURE RANGE DENSITY(G/ML)=

OVER

RANGE *** OF THE DATA TEMPERATURE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 86.2 -166.71, C= 50.0 DEG. CENT. REFERENCE: CMLR 2346 **#** -. 80765. FOLLOWING ANTOINE CONSTANTS (EATR 4491): A.

5.789 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)* **** WARNING: THE ABOVE VALUES ANT EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE

.0647*TEMP.(C.) 50.0 DEG. CENT. 32.5060 -25.0 TO EQUATION: SURFACE TENSION (DYNES/CM) = DETERMINED OVER THE TEMPERATURE RANGE

WERE USED TO CALCULATE THE SURFACE TENSION 31.2 DYNES/CM ++++* WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE WERE USED TO CALCULATE THE SURFACE TENSION

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

: VOLUME CC/MOLE 682.56 G:1/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .03<u>9</u> DIFFUSION COEF.

WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR & 5.33-03 CENTIPOISE ABOVE CRITICAL VAPOR WAS ESTEMATED USING THE THE VISCOSINY OF THE VAPOR WAS ESTEMATED USING TH MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) PAGE NUMBER B-220

ij

20.0 DEGREES

۲

1694

END OF COMPOUND EA

FIED 뿚 **SS**248

ZHURN. FIZ KHIM. 37. 201(1963)

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL COMMON NAME: FORMULA WEIGHT: 225.2 GENERAL REFERENCE: CWLR 2346 SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 25.0 DEGREES CENTIGRADE BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** 1694 SUMMARY OF PROPERTIES OF EA

.00087 +TEMP.(C.) DETERMINED OVER DENSITY(G/ML)= 1.0453 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0670 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

DETERMINED OVER THE 88.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.80765, B= -166.71, C= perature range 25.0 to 50.0 deg. cent. Reference: CWLR 2346

TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) 3

REFERENCE: CWLR 2346 .0647+TEMP.(C.) 50.0 DEG. CENT. 30.9 DYNES/CM 32.5000 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM)= 32, DETERMINED OVER THE TEMPERATURE RANGE 21 WERE USED TO CALCULATE THE SURFACE TENSION Ή

PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 포

ATM. CC/MOLE 682.56 FULLOWING CRITICAL POENSITY TEMPERATURE 46B.07 3299 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.44-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) PAGE NUMBER B-221

25.0 DEGREES C.

AT

1694

END OF COMPOUND EA

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL RNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND. CALCULATION OF VAIUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO GENERAL REFERENCE: CWLR 2346 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 225.2 1694 6 SUMMARY OF PROPERTIES COMMON NAME: **** MARNING:

.00087 *TEMP.(C.) DETERMINED DVER ١ REFERENCE: CWLR 2346 1.0670 1.0323 WAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 25.0 TO THE TEMPERATURE RANGE DENSITY(G/ML)=

DETERMINED OVER THE

86.2 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -. 80765, B= -166.71, C. PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 TEMPERATURE RANGE Ŧ

3.263 E WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)*

REFERENCE: CWLR 2346 .0647*TEMP.(C.) 50.0 DEG. CENT. R 29.9 DYNES/CM 32.5000 -25.0 TO WERE USED TO CALCULATE THE SURFACE TENSION DETERMINED OVER THE TEMPERATURE RANGE EQUATION: SURFACE TENSION(DYNES/CM)= THE

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 37. SSIFIED

CC/MOLE 682.56 468.07 SIA/CC .3299

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .045 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.76-03 CENTIPOISE

PAGE NUMBER 8-222

ပ

40.0 DEGREES

۲

1694

COMPOUND EA

END OF

.00088 *TEMP.(C.) DETERMINED OVER KOK ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY IN FOLLOWING ANIONE CONSTANTS (EATR 4491): A* 9.12770. R. 23.0 DETERMINED OVER THE REFERENCE: CWLR 2346 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** **** RANGE **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL WFRE LISED TO CALCULATE THE SURFACE TENSION: 37.4 DYNES/CM **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE VOLATILITY(MG/METER CUBED)= .45-01 VOLATILITY(MILLIMOLE/ METER CUBED)= **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.1173 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0820 - THE TEMPERATURE RANGE 25.0 10 50.0 DEG. CENT. REFERENCE: CWLR 2346 103.3 .0916*TEMP.(C.) ů S(EATH 4491): A= -1.03746, B= -226.22, 50.0 DEG. CENT. REFERENCE: CWLR 2346 ı WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 33.7000 16.5 FOLLOWING ANTOINE CONSTANTS(EATH 4491): A. HEAT OF VAF JRIZATION (KILOCALORIES/MOLE) = VOLATILITY (MG/METER CUBED) = .45-01 SURFACE TENSION (DYNES/CM) = 341.651 THE FOLLOWING ANTOINE CONSTANTS(EATH DEMPENATURE RANGE 25.0 TO 50.0 DE TO CALCULATE THE VISCOSITY ESTIMATED BOILING POINT (CENT.)= . 31-05 VISCOSITY(CENTISTOKES)= VAPOR PRESSURE(TORRI= SSIFIED

VISCOSITY OF VAPOR # 4.15-03 CENTIPOISE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM, 48,23(1944)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

.025

DIFFUSION COEF.

MODIFIED SUTHERLANDS

ZHURN. FIZ KHIM. 37. 201(1963)

FOLLOWING CRITICAL PROPERSIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE

ATE.

CC/NOLE VOLUME

DENSITY TEMPERATURE

H

531.18

.3348

-40.0 DEGREES C. ۲ 1699 END OF COMPOUND EA

PAGE NUMBER 8-223

.00088 *TEMP.(C.) DETERMINED DVER Ş **** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS CCMPOND, CALCULATION OF VALUES BELOW DATA RANGE MAY THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A** 9.12770, B** 3230.30, C** 260.7 DETERMINED OVER THE TEMPERATURE **** DETERMINED OVER THE TEMPERATURE RANGE 42.5 TO 180.0 DEG. CENT. REFERENCE: NB 9298 GENERAL REFERENCE: CWLR 2346 RANGE *** ** .32-02 -20.0 DEGREES CENTIGRADE VOLATILITY(MG/METER CUBED)= .68+00 VOLATILITY(MILLIMDLE/ METER CUBED)= ***** WARNING: THE BADVE VALUES ARE EXTRAPOLATED GUT OF THE DATA TEMPERATURE ı FORMULA WEIGHT: 16.3 ESTIMATED BOILING POINT(CENT.) = 256.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .68+00

1699

PROPERTIES OF EA

SURVERY

RANGE **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE REFERENCE: CWLR 2346 DENSITY(G/ML) = 1.0997 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346

DETERMINED OVER 103.3 ပံ THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.03746, B= -226.22, TEMPERATURE KANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY

* * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 47.500 VISCOSTIV(CENTISTOKES).

REFERENCE: CWLR 2346 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 234 WERE USED TO CALCULATE THE SURFACE TENSION 35.5 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPCLATED DUT OF THE DATA TEMPERATURE RANGE ***** .0916*TEMP.(C.) 33.7000 -25.0 TO WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION (DVNES/CM) = DETERMINED OVER THE TEMPERATURE NANGE THE

ZHURN. FIZ KHIM. 37. 251(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PENSITY TEMPERATURE VOLUME, PRESSURE ATK. SENSITY TEMPERATURE VOLUME 6:4/CC DEG C CC/MOLE DEG C 463,14 THE

CM.SQ./SEC CALCULATED FOR CATCR IN AIR .030 DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MGDIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR * 4.58-03

-20.0 DECREES ۲ 1699 END OF COMPOUND EA

PAGE NUMBER 8-224

.00088 +TEMP.(C.) DETERMINED OVER ***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 9.12770, B* 3230.30. C* 36.7 DEFENDENCE. VOLATILITY(MG/METER CUBED) = .68+01 VOLATILITY(MILLIMOLE/ METER CUBED) = .32-01 .O DEGREES CENTIGRADE 9.12770, 8* 3230.30, C* 260.7 REFERENCE: MB 9298 DENSITY(G/ML) = 1.0820 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 1699 TEMPERATURE RANGE 42.0 TO 18**0.**0 DEG. CENT. REFER Were used to calculate the following four properties: 16.2 SUNMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = ESTIMATED BOILING POINT (CENT.) * VAPOR PRESSURE(TORR)=

Sand of

DETERMINED OVER THE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 103.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.03746, B= -226.22, C= ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2349 WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE Ή

14.173 VISCOSITY (CENTISTOKES)*

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: CWLR 2346 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0916*TEMP.(C.) 50.0 DEG. CENT. R 33.7 DYNES/CM 33.7000 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM) = 33.
DETERMINED OVER THE TEMPERATURE RANGE 25.
WERE USED TO CALCULATE THE SURFACE TENSION

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATM. E VOLUME CC/MOLE 631.18 466.14 표

ZHURN. F1Z KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VAPOR = 5.02-03 VISCOSITY OF THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING FHE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

.O DEGREES C. ۲ 1699 END OF COMPOUND EA

PAGE NUMBER 8-225

Appendix B

₹ SSI

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.12770, B= 3230.30, C= 260.7 DETERMINED OVER THE TEMPERATURE HAVE HANDE 42.0 TO 180.0 /DEG. CENT. REFERENCE: NB 9298

VAPOR PRESSURE(TORR)= .42-02 GENERAL PEFERENCE: CWLR 2346 V:]LATIL!TY(MG/METER CUBED) = .48+02 VOLATILITY(MILLIMOLE/ METER CUBED) = .23+00 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 211.3 1699 SUMMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= COMMON NAME: ESTIMATED BOILING POINT(CENT.) VILATILITY (MG/METER CUBED) =

.00088 *TEMP.(C.) DETERMINED OVER 1.0820 -REFERENCE: CWLR 2346 DENSITY(G/ML)= 1.0543 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C

DETERMINED OVER THE RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 103.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.03746, B= -226.22, C= PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 THE FOLLOWING ANTO

TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFEREN

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 6.259

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** ***

WERE USED TO CALCULATE THE SURFACE TENSION 31.9 DYNES/CM .0916*TEMP.(C.) 50.0 DEG. CENT. F 33.7000 -25.0 TO DETERMINED OVER THE TEMPERATURE RANGE EQUATION: SURFACE TENSION(DYNES/CM) =

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. DENSITY TEMPERATURE VOLUME 뿔

.3348 466,14 631.18 25.10

DIFFUSION COEF. # .041 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 5.45-03 CENTIPOISE THE JISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 1699 AT 20.0 DEGREES C.

PAGE NUMBER B-226

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 256.4 ESTIMATED BOILING POINT (CENT.)= .66-02 VAPOR PRESSIRE(TORR)=

.00088 *TEMP.(C.) DETERMINED OVER **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** DENSITY (G/M!) = 1.0599 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

VOLATILLITY(MILLIMOLE/ METER CUBED)=

16.1

.75+02

HEAT OF VAPORIZATION (KILOCALORIES/MOLE) ..

VOLATILITY (MG/METER CUBED)*

DETERMINED OVER THE TS(EATR 4491): A* -1.03746, B* -226.22, C* 103.3. 50.0 DEG. CENT. REFERENCE: CWLR 2346 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* TEMPERATURE RANGE 25.0 IO 50.0 DEG. CENT. R 5.310 WERE USED TO CALCULATE THE VISCOSITY VISCOSTIY(CENTISTOKES)=

REFERENCE: CWLR 2346 .0916*TEMP.(C.) 50.0 DEG. CENT. R 33.7000 -25:0 TD TENSION(DYNES/CM)= E TEMPERATURE RANGE EQUATION: SURFAC DITERMINED OVER

31.4 DYNES/CM LATE THE SURFACE TENSION WERE USED TO CAL

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATK. CC/MOLE 631.18 466.14 3348 THE

ZHURN. FIZ KHIM. 37. 201 (1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .043 PIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.56-03 CENTIPOISE

25.0 DEGREES C. ۲ 1699 END UF COMPOUND EA

PAGE NUMBER B-227

SS1'

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALED UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(FATE 491): A* 9.12770, B* 3230.30, C* 260.7 DETERMINED OVER THE TEMPERATURE RANGE MAY OF THE TEMPERATURE RANGE A2.0 TO 180.0 DEG. CENT. REFERENCE: MB 9298 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.0 VOLATILITY(MG/METER CUBED)= .26+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .12+01 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 40.0 DEGREES CENTIGRADE TEMPERATURE RANGE 42.0 TO 180.0 DEG. CENT. REFER Were used to calculate the following four properties: SUMMARY OF PROPERTIES OF EA ESTIMATED BOILING POINT (CENT.)* VAPOR PRESSUVE(10AR) =

.00088 *TEMP.(C.) DETERMINED OVER DETERMINED OVER THE DENSITY(G/ML) = 1.0467 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0800 - THE TEMPERATURE MANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346 103.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.03746, B= -226.22, C= FRATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 THE FOLLOWING ANTOINE CONSTANTS (EATR OF THE FOLLOWING ANTOINE CONSTANTS (EATR OF THE VISCOSITY WERE USED TO CALCULATE THE VISCOSITY OF THE VI

3.473

REFERENCE: CWLR 2346 50.0 DEG. CENT. RI 30.0 DYNES/CM 33.7000 -25.0 TO EQUATION: SUPFACE TENSION(DYNES/CM)= 33. DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION **H**

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE CC/MOLE DENSITY LEMPERATURE VOLUME FIED

3348

ZHURN. FIZ KHIM. 37. 201 (1963)

CM.SQ./SEC CALCULATED FOR VAPGR IN AIR DIFFUSION COEF.

CENTIPUISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.89-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

40.0 DEGREES C. ¥ 1699 END OF CCAMPOUND EA

PAGE NUMBER 8-228

GENERAL REFERENCE: EATR4210 1701 AT -40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 267.4 2 SUMMARY OF PROPERTIES OF COMMON MARE: VX COMMON NAME:

DETERMINED DYER THE 172.5 ů REFERENCE: EC-TR 76056 2072.10. 7.28100, Bm CONSTANTS(EATR 4491): As 30.0 TO 231.0 DEG. CENT. THE FOLLOWING ANTOINE TEMPERATURE RANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VOLATILITY(MILLIMOLE/ METER CUBED)= 29.3 VAPOR PRESSURE(TORR)44-08
ESTIMATED GOILING POINT(CENT.) ... 298.4
HEAT OF VAPORIZATION(KILGCALCRIES/MOLE) ...
VOLATILITY(MG/METER CUBED)81-04

.00083 *TEMP.(C.) DETERMINED DVER RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

• REFERENCE: CWLR 2346 1.0622 MAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 25.0 10 THE TEMPERATURE RANGE DENSITY (G/ML) =

RANGE THE DATA TEMPERATURE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF

DETERMINED OVER **6**0.0 ů TS(EATR 4491): A. -.80572, B. -189.38, 50.0 DEG. CENT. REFERÊNCE:CHLR2346 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. 8524.939

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CALR 2346 .1326+TEMP.(C.) 50.0 DEG. CENT. ı 34.6631 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM)= 34. DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION ¥ SSIFIED

**** WERE USED TO CALCULATE THE SURFACE TENSION 40.0 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 CWLR2346

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0 REFERENCE: CWLR2346

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0 REFERENCE: CWLR 2346

HEAT DF FORMATION OF LIQUID (KCAL/MOLE)= -318.50 AT 25.0 DEGREE CENT. REFERENCE: EST.BENSN.CHEM.R.MO3.P279.69

HEAT CAPACITY (KCAL/MOLE)= .1100 AT 25.0 DEGREE CENT. REFERENCE: TECH REF HB. CRDL-63-S-780

SOLUBILITY(G/100G SOLVENT) .500+01 AT 21.5 DEGREE CENTIGRADE REFERENCE: WATER.CHIR 2346

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 7 18 CC/NOLE 776

841.66 473.27 CM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 3.83-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: MAR-CALC ARCSL-TR IN PROGRESS DAYGEN INDEX(UNITLESS) = 21.4 AT AMBIENT TEMPERATURE REFERENCE: MB9283 P 4 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

ပ -40.0 DEGREES ۲ 1701 END OF COMPOUND EA

PAGE MUMBER B-229

GENERAL REFERENCE! EATH4210 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 267.4 ¥ 1701 Ę SUMMARY OF PROPERTIES OF × COMMON NAME:

THE RESERVE OF THE PARTY OF THE

DETERMINED OVER THE 172.5 7.28100, B= 2072.10, REFERENCE: EC-T# 76058 7.28100. TEMPERATURE RANGE 30.0 TO 231.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROFERTIES: VAPOR PRESSURE(TORR)= .50-06 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A.

HEAT OF VAPORIZATION (KILOCALORIES/WOLE)= ESTIMATED BOILING POINT (CENT.).

**** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** VOLATILITY(MILLIMOLE/ METER CUBED)= .84-02 VOLATILITY(MG/METER CUBED)=

.00083 «TEMP.(C.) DETERMINED OVER 1.0456 MAS CALCULATED FROM THE EQUATION: DENSITY= 1.0290 - RANGE 25.0 TG 50.0 DEG. CENT. REFERENCE: CWLR 2346 TEMPERATURE RANGE DENSITY (G/ML) *

***** WARKING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 80.0 -.80572, B= -189.38, C= 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR2346 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

224.619 VISCOSITY(CENTISTOKES)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CMLR 2346 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL WERE USED TO CALCULATE THE SURFACE TENSION 37.3 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ,1326+TEMP.(C.) 50.0 DEG. CENT. R 37.3 DYNES/CM 34.6631 -EQUATION: SURFACE TENSION(DYNES/CM)= 」 SSIFIED

REFERENCE: EST. BENSN. CHEM.R. NO3, 9279, 69 REFERENCE: WATER, CHLR 2346 REFERENCE: TECH REF HB, CRDL-63-5-780 REFERENCE: CWLR2346 REFERENCE: CWLR 2346 25.0 DEGREE CENT. CWLR2348 25.0 DEGREE CENT. REFERENCE MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 REFRACTIVE INDEX(ND)= 1.4774 AT 25.0 DEG. CENT. FEFF FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0 REFERENCE HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -318.50 AT 25.0 DE (KCAL/MOLE)= -318.50 AT .1100 AT 25.0 DEGREE CE .500+01 AT HEAT CAPACITY (KCAL/MOLE). SOLUBILITY(G/:00G SOLVENT)

ZHURN. FIZ KHIM. 37. 201 (1962) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE CC/MOLE DENSITY TEMPERATURE VOLUME DEG C 473.27 TE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .024 DIFFUSION COEF.

REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS REFERENCE: NB9253 P 4 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) VISCOSITY OF VAPOR = 4,23-03 CENTIPOISE 3.6 AT AMBIENT TEMPERATURE 21.4 AT AMBIENT TEMPERATURE MODIFIED SUTHERANDS EQ., J.PHY.CHEM,48.23(1944)
DIPOLE MOMENT(DEBYES) 3.6 AT AMBIENT TEM

-20.0 DEGREES ¥ 1701 END OF COMPOUND EA

PAGE NUMBER B-230

GENERAL REFERENCE: EATR4210 .0 DEGREES CENTIGRADE 267.4 FORMULA WEIGHT: ٣ SUMMARY OF PROPERTIES OF × COMMON NAME:

DETERMINED OVER THE 172.5 ပီ THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.28100, B= 2072.10, TEMPERATURE RANGE 30.0 TO 231.0 DEG. CENT. REFERENCE: EC-IR 76058 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)=

HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .29+00 ESTIMATE BOILING POINT (CENT.) = 298.4

RANGE **** 11-02 ***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE VOLATILITY(MILLIMOLE/ METER CUBED)=

.00083 +TEMP.(C.) DETERMINED OVER 1.0290 WAS CALCULATED FROM THE EQUATION: DENSITY 1.0290 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CHLR 2346 THE TEMPERATURE RANGE DENSITY (G/ML) =

**** RANGE ***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE DETERMINED OVER THE 80.0 -189.38, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -.80572, B* -189 ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR2348 TEMPERATURE RANGE

36.474 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES). ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

REFERENCE: CWLR 2346 .1326*TEMP.(C.) 50.0 DEG. CENT. 34.7 DYNES/CM 34.6631 -25.0 10 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM) = 里

REFERENCE: EST. BENSN, CHEM.R.NO3, P279.69 **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT OF THE DATA TEMPERATURE RANGE REFERENCE: CWLR2346 REFERENCE: CWLR 2346 25.0 DEGREE CENT. REFERENCE: 1 **CWLR2346** MELTING POINT (DEG. CENT.) * -50.0 REFERENCE: -39 TO -60 REFRACTIVE INDEX(ND)* 1.4774 AT 25.0 DEG. CENT. REF FLASH PUINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0 HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -318.50 AT HEAT CAPACITY (KCAL/MOLE)= .1100 AT 25.0 DEGREE

ZHURN. FIZ KHIM. 37. 201 (1963) REFERENCE: WATER, CWLR 2348 .500+01 AT SOLUBILITY(G/100G SCLVENT)

REFERENCE: TECH REF HB, CRDL-63-5-780

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE CC/MOLE DENSITY TEMPERATURE VOLUME 841.66 GM/CC THE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .028 DIFFUSION COEF.

THE VISCOSITY OF THE VATOR MAS ESTIMATED STORY OF VAPOR = 4.63-03 CENTIPDISE MODISTED SUTHERLANDS OF JUPHY-CHEM 48,23(1944)

MODISTED SUTHERLANDS ARCSL-TR IN PROGRESS

0.100 ACCES TONEST ON THE SAMPLENT TEMPERATURE REFERENCE: NB9253 P 4 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE 21.4 AT AMBIENT TEMPERATURE OXYGEN INDEX(UNITLESS)= 王

PAGE NUMBER 6-231

.O DEGREES C.

7

1701

END OF COMPOUND. EA

SSIFIED

GENERAL REFERENCE! EATR4210 172.5 DETERMINED OVER THE VOLATILITY(MG/METER CUBED) - .48+01 VOLATILITY(MILLIMOLE/ METER CUBED) - .18-01 ů 7.28100, 8= 2072.10, REFERENCE: EC-TR 76058 FORMULA WEIGHT: 267.4 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 22.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. 30.0 TO 231.0 DEG. CENT. VAPOR PRESSURE(TORR) = .33-03
ESTIMATED BOILING POINT(CENT.) = 298.4
HEAT OF VAPOR (ZATION(MILOCALORIES/MOLE) = VAPOR PRESSURE(TORR)* TEMPERATURE RANGE

20.0 DEGREES CENTIGRADE

¥

1701

×

SUMMARY OF PROPERTIES OF EA

COMMON NAME:

199

W.

.00083 +TEMP.(C.) DETERMINED DVER DENSITY(G/ML)* 1.0124 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0290 -The temperature range 25.0 to 50.0 deg. cent. Reference: Culr 2346

RANGE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 80.0 -.80572, B= -189.38, C= TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CHLR2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 12.256 THE FOLLOWING ANTGINE CONSTANTS(EATR 4491): A: TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. R

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

REFERENCE: CMLR 2346 WERE USED TO CALCULATE THE SURFACE TENSION 32.0 DYNES/CM **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .1326*TEMP.(C.) 50.0 DEG. CENT. R 34.6631 -25.0 TG EQUATION: SURFACE TENSION(DYNES/CM)= DETERMINED OVER THE TEMPERATURE RANGE と SSIFIED 260

MELTING POINT (DEG. CENT.) =

REFERENCE: EST. BENSN. CHEM.R. NO3. P279.69 REFERENCE: TECH REF HB, CRDL-63-5-780 CENTIGRADE REFERENCE: MATER, CWLR 2346 MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 CWLR2348
REFRACTIVE INDEX(ND) = 1.4774 AT 25.0 DEG. CENT. REFERENCE: CWLR2346
FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 159.0 REFERENCE: CWLR 2346
HEAT OF FC:MATION OF LIQUID (MCAL/MOLE) = -318.50 AT 25.0 DEGREE CENT. REHEAT CAPACITY (MCAL/MOLE) = 1100 AT 25.0 DEGREE CENT. 21.5 DEGREE CENTIGRADE .500+01 AT SOLUBILITY(G/1003 SOLVENT)

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 꾶

CM. SQ. / SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF. .

19.00

841.65

473.27

3177

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.Phy.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.03-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS DIVIDEX(UNITLESS) = 21.4 AT AMBIENT TEMPERATURE REFERENCE: N89253 P 4

20.0 DEGREES ¥ 1701 END OF COMPOUND EA

PAGE NUMBER 6-232

EST. BENSN, CHEM.R, NO3, P279.69

GENERAL REFERENCES EATRASSO 25.0 DEGREES CENTIGRADE 1701 AT 25.0 DEGR! FORMULA WEIGHT: 267.4 SUMMARY OF PROPERTIES OF EA × COMMON NAME:

DETERMINED OVER 172.5 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.28100, B= 2072.10, TEMPERATURE RANGE 30.0 TO 231.0 DEG. CENT. REFERENCE: EC-TR 76058 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A.

VAPOR PRESSURE(TORR)=

RANGE **** ESTIMATED BOILLING POINT(CENT.)= 298.4
HEAT OF VAPORIZATION(KILOCALDRIES/MOLE)= 21.6
VOLATILITY(MG/METER CUBED)= .89+01 VOLATILITY(MILLIMOLE/ METER CUBED)=
**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

.00083 +TEMP.(C.) DETERMINED OVER 1 REFERENCE: CWLR 2346 1.0290 DENSITY(G/ML)= 1.0083 WAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 25.0 TU THE TEMPERATURE RANGE

DETERMINED OVER THE 90.0 ů IS(EATR 4491): A= -.80572, B= -189,38, 50.0 DEG. CENT. REFERENCE:CWLR2346 FOLLOWING ANTOINE CONSTANTS (EATR 4491): THE FOLLOWING ANIOLING 25.0 TO 50.0 DE TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTÍSTOKES) = 9.5 UNCLASSIFIED

9.958

REFERENCE: CWLR 2880 .1326*TEMP.(C.) 50.0 DEG. CENT. 31.3 DYNES/CM 34.6631 -25.0 10 DETERMINED OVER THE TEMPERATURE RANGE EQUATION: SURFACE TENSION (DYNES/CM)* THE

-80 CWLR2346 Reference: CWLR2346 REFERENCE: CWLR 2348 .0 REFERENCE: -39 TO -60 25.0 DEG. CENT. REF (KCAL/MOLE)= -318.50 AT FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)# 159.0 HEAT OF FORMATION OF LIQUID (KCAL/MOLE)# -318.50 WERE USED TO CALCULATE THE SURFACE TENSION MELTING POINT (DEG. CENT.) = -50.0 REFRACTIVE INDEX(ND)= 1,4774 AT 25.0 DEG .1100 AT CAPACITY (KCAL/MDLE)+ HEAT

REFERENCE: WATER, CWLR 2346 25.0 DEGREE CENT. REFERENCE: TECH REF MB, CRDL-63-S-780 T 21.5 DEGREE CENTIGRADE REFERENCE: MATER CHITCHADE .500+01 AT SOLUBILITY(G/100G SOLVENT)

ZHURN. F12 KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE ATE. 19.00 CC/MOLE 841.66 포

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .034 DIFFUSION COEF.

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

25.0 DEGREES ¥ 1701 END OF COMPOUND EA

PAGE NUMBER 8-233

Appendix B

GENERAL REFERENCE! EATR4210 40.0 DEGREES CENTIGRADE 297.4 FORMULA WEIGHT: 1701 EA SUMMARY OF PROPERTIES OF × COMMON NAME:

DETERMINED OVER THE 172.5 ပီ TEMPERATURE RANGE 30.7 TO 231.0 DEG. CENT. REFERENCE: EC-TR 76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORB)*

.00083 +TEMP. (C.) DETERMINED OVER .17+00 VOLATILITY(MG/METER CUBED)= .46+02 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML) - .9958 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0290 -THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 20.6 ESTINATED BOILING POINT(CENT.)= 298.4 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .46+02

DETERMINED OVER THE 80.0 -.80572, B* -189:38, C* FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.80572, B= -189 ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR2346 WERE USEC TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

5.924 VISCOSITY (CENTISTOKES)=

REFERENCE: CWLR 2346 . 1326*TEMP.(C.) 50.0 DEG. CENT. F 29.4 DYNES/CM 34.6631 **-**25.0 TO EQUATION: SURFACE TENSION(DYNES/CM)*
DETERMINED OVER THE TEMPERATURE RANGE 里

MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 REFRACTIVE INDEX(ND)= 1.4774 AT 25.0 DEG. CENT. WERE USED TO CALCULATE THE SURFACE TENSION

DEGREE CENT. REFERENCE: EST.BENSN,CHEM.R,NO3,P279.69
REFERENCE: TECH REF HB, CRDL-63-5-780
CENTIGRADE REFERENCE: WATER,CWLR 2346 REFERENCE: CWLR2346 25.0 DEGREE CENT. RE MELTING POIN; (CC. 1,4774 AT 25.0 CL.)

REFRACTIVE INDEX(ND)= 1,4774 AT 25.0 CL.

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= -318.50 AT 25.0 DEGREE CENT.

HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -318.50 DEGREE CENTIGRADE

21.5 DEGREE CENTIGRADE

ZHURN. FIZ KHIM. 37, 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE Ħ

ATE. 19.00 CC/MOLE 841.66 473.27 GM/CC . 3177

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIEC SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.43-03 CENTIPDISE DIPOLE MOMENT(DEBYES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS OXYGEN INDEX(UNITLESS) = 21.4 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P 4

40.0 DEGREES AT 1701 END OF COMPOUND EA

PAGE NUMBER B-234

Appendix B

TECH MEMO 31-42 12-9-57 **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOLOMING VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A 6.52001, B 1428.57, C 147.8 DETERMINED OVER THE TEMPERATURE RANGE I12.5 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB8707 -40.0 DEGREES CENTIGRADE 1724 SUMMARY OF PROPERTIES OF EA

VAPOR PRESSURE(TORR)*

VOLATILITY(MG/WETER CUBED)* .30-02 VOLATILITY(MILLIMOLE/ METER CUBED)* ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 30.6 ESTIMATED BOILLING POINT(CENT.) = 244.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .30-02

.00091 +TEMP.(C.) DETERMINED OVER REFERENCE: FMC DA-11-173-AMC-308(A) 1-66 - 4066. .9671 WAS CALCULATED FROM THE EQUATION: DENSITY= 73.9 DEG. CENT. -53.9 10 THE TEMPERATURE RANGE DENSITY (G/ML) =

RANGE ****

123.0 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00996, B= -201.21, C= SE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWL TECH MEMO 31-42 12-9-57 VISCOSITY(CENTIFO(SE)= 25.961 RANGE 1HE

**** OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWL TECH MEMO 31-42 12-9-57 **** WERE USED TO CALCULATE THE SUPFACE TENSION 29.7 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE .0626*TEMP.(C.) 50.0 DEG. CENT. ŧ 27,1630 -25.0 TO DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SUPFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM)* 116

INT.

REFERENCE: TAG DC. NB10112 P51

REFERENCE: NB9283 P61 20.0 DEG. CENT FLASA POINT, OPEN CUP(CENTIGRADE) = 95.0 AUTOIGNITION TEMPERATURE(CENTIGRADE) = 129.0 REFRACTIVE INDEX(ND) = 1.4480 AT

ZHURN. FIZ KHIM. FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE VOLUME CC/MOLE 罪

201 (1963

37.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .021 DIFFUSION COEF. THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.18-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS DXYGEN INDEX(UNITLESS)= 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23

-40.0 DEGREES ۲ 1724 END OF COMPOUND EA

Appendix B

የመስመያ ያለር እና በሚያውር እና እና እና እና እና እና እና እር

SSIFIED

COMMON NAME: OL FORMULA WEIGHT: 235.3

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 6.52001, B* 1428.57, C* 147.8 DETERMINED OVER THE

TEMPERATURE RANGE 112.8 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB8707 .00091 +TEMP.(C.) DETERMINED OVER REFERENCE: FMC DA-11-173-AMC-308(A) 1-66 VOLATILITY(MG/METER CUBED)* .32+00 VOLATILITY(MILLIMOLE/ METER CUBED)* .14-02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPGLATED OUT OF THE DATA TEMPERATURE RANGE ***** -20.0 DEGREES CENTIGRADE ŧ .9307 .9489 WAS CALCULATED FROM THE EQUATION: DENSITY* 1724 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: TEMPERATURE RANGE 112.8 TO 151.9 DEG. CENT. HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= VAPOR PRESSURE(TORR)= .22-04 ESTIMATED BOILING POINT(CENT.)= 244.8 DENSITY (G/ML) =

123.0 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY -1.00990, B= -201.21, C= TECH MEMO 31-42 12-9-57 50.0 DEG. CENT. REFERENCE: CML TECH NEWO FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= iE 25.0 TO 50.0 DEG. VISCOSITY(CENTIPOISE)*

THE TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: CML TECH MEMO 31-42 12-9-57 教育 女子会 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 50.0 DEG. CENT. RI 28.4 DYNES/CH 27.1630 -25.0 10 EQUATION: SURFACE TENSION(DYNES/CM) = 27.
DETERMINED OVER THE TEMPERATURE RANGE 25
WERE USED TO CALCULATE THE SURFACE TENSION **J**E

REFERENCE: TAG OC. NB10112 PB1 REFERENCE: TAG OC. NB10112 PB1 REFERENCE: NB9283 PB1 20.0 DEG. CENT. 129.0 95.0 FLASH POINT, OPEN CUP(CENTIGRADE) = 9! AUTOIGNITION TEMPERATURE(CENTIGRADE) = REFRACTIVE INDEX(ND)= 1.4480 AT

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

GENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C CC/MOLE ATM. 11E

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .025 DIFFUSION COEF. -

17.38

2983

THE VISCOSTIY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.60-03 CENTIPOISE DIPOLE MOMENT(DEBYES) = 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS OXYGEN INDEX(UNITLESS) = 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23

-20.0 DEGREES ۲ 1724 END OF COMPOUND EA

8-73

PAGE NUMBER

SSIFIED

GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-67 OF VALUES BELOW DATA RANGE MAY NOT .O DEGREES CENTIGRADE NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

6.52001, 8= 1428.57, C= 147.8 DETERMINED GVER REFERENCE: CWL TECH MEMO 31-42 +N88707 "HE FOLLOWING ANTOINE CONSTANTS(EATR 4491): As TEMPERATURE RANGE 112.8 TO 151.9 DEG. CENT.

VOLATILITY(MG/METER CUBED)= .98+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .42-01 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .71-03

ESTIMATED BOILING POINT(CENT.)= 244.8

HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 22.3

VOLATILITY(MG/METER CUBED)= .98+01 VOLATILI

.00091 *TEMP.(C.) DETERMINED OVER WAS CALCULATED FROM THE EQUATION: DENSITY# .8307 - .00091 *TEMP.(C.) -53.9 TO 73.9 DEG. CENT. REFERENCE: FMC DA-11-173-AMC-308(A) 1-66 DENSITY(G/ML)= .9307 THE TEMPERATURE RANGE

123.0 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00990, B= -201.21, C= GE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWL TECH MEMO 31-42 12-9-57 VISCOSITY(CENTIPOISE)= 4.226 Ξ

**** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWL TECH NEMO 31-42 **** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE . .0626*TEMP.(C.) 50.0 DEG. CENT. RI 27.2 DYNES/CM 27.1630 -25.0 10 EQUATION: SURFACE TENSION(DYNES/CM)= 27.
DETERMINED OVER THE TEMPERATURE RANGE 25
MERE USED TO CALGULATE THE SURFACE TENSION Ŧ

ENT.

REFERENCE: TAG DC. NB10112 P51

REFERENCE: NB9283 P61 20.0 DEG. CENT. REFRACTIVE INDEX(ND)= 1.4480 AT 20.0 DEG. FLASH POINT, OPEN CUP(CENTIGRADE)= 95.0 AUTOIGNITION TEMPERATURE(CENTIGRADE)= 129.0

ZHURN. FIZ KHIM. 37. 201(1963) THE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. 788.84 366.74 . 2983

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .030 DIFFUSION COEF.

17.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.03-03 CENTIPDISE 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23 VISCOSÍTY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE 20.2 AT AMBIENT TEMPERATURE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) OXYGEN INDEX(UNITLESS)* DIPOLE MOMENT (DEBYES)= THE

ပဲ DEGREES ¥ 1724 END OF COMPOUND EA

PAGE NUMBER 8-237

12-9-57 GENERAL REFERENCE: CWL TECH MEMO 31-42 ***** WARNING: SINCE IHERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING SINCE IHERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 6.52001, B* 1428.57, C* 147.8 DETERMINED OVER THE TEMPERATURE RANGE 112.8 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB8707 20.0 DEGREES CENTIGRADE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 19.9 VOLATILITY(MILLIMOLE/ METER CUBED)* 1724 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: ESTIMATED BOILING POINT(CENT.)= 244.8 HEAT OF VAPORIZATION(KILDCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .13+03 9 OF PROPERTIES 10-01 SCHMARY VAPOR PRESSURE(TORR) *

DETERMINED OVER .00091 *TEMP.(C.) DENSITY(G/ML)* .9125 WAS CALCULATED FROM THE EQUATION: DENSITY* .9307 - .00091 *TEMP.(C.) THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: FMC DA-11-173-AMC-308(A) 1-86

RANGE ****

23.0 DETERMINED DVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY 123.0 B= -201.21, C* THE FOLLDWING ANTOINE CONSTANTS(EATR 4491): A= -1.00990, B= -201.21, C: RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWL TECH MEMO 31-42 12-9-57 2.496 VISCOSITY (CENTIPOISE) *

REFERENCE: CWL TECH MEMO 31-42 12-9-57 **** **** WERE USED TO CALCULATE THE SURFACE TENSION 25.9 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0626*TEMP.(C.) 50.0 DEG. CENT. R 27.1630 -25.0 TO DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION (DYNES/CM)= THE

INT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 REFERENCE: TAG OC. NB10112 P51 REFERENCE: NB9283 P61 CENT. 20.0 DEG. REFRACTIVE INDEX(ND)= 1.4480 AT 20.0 DEG. FLASH POINT, OPEN CUP(CENTIGRADE)= 95.0 AUTOIGNITION TEMPERATURE(CENTIGRADE)= 129.0

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV, DENSITY TEMPERATURE VOLUME PRESSURE GM/CC UEG C CC/MOLE ATM. . 2983 366.74 789.84 17.38 표

201 (1963]

37.

ZHURN. FIZ KHIM.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .035 DIFFUSION COEF. *

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.45-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS DXYGEN INDEX(UNITLESS)= 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

20.0 DEGREES ¥ 1724 END OF COMPOUND EA

B-238

PAGE NUMBER

UNCLASSIFIED 266

GENERAL REFERENCE: CWL TECH MEMO 31-42 WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** 25.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES

TEMPERATURE RANGE 112.8 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +N88707
VAPOR PRESSURE(TIRB).- (C.). (

ESTIMATED BOILING POINT (CENT.)*

RANGE **** VOLATILITY(MG/METER CUBED)= .23+03 VOLATILITY(MILLIMOLE/ METER CUBED)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = VOL

DN: DENSITY= .9307 - .00091 *TEMP.(C.) DETERMINED QVER Reference: FMC DA-11-173-AMC-308(A) 1-66 DENSITY(G/ML) = .9080 WAS CALCULATED FROM THE EQUATION: DENSITY = THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: 1

123.0 DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY REFERENCE: CWL TECH MEMO 31-42 12-9-57 - .0626+TEMP.(C.) 50.0 DEG. CENT. R 25.6 DYNES/CM 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 NIIPO[5] S. 2.237 27.1630 -25.0 TO THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= VISCOSITY(CENTIPOISE) = 2.237 EQUATION: SURFACE TENSION(DYNES/CM) = DETERMINED OVER THE TEMPERATURE RANGE RANGE 표

ENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 Reference: TAG DC. NB10112 P51 Reference: NB9283 P61 FLASH POINT, OPEN CUP(CENTIGRADE) = 95.0 BEG. CENT. WERE USED TO CALCULATE THE SURFACE TENSION

AUTOIGNITION TEMPERATURE (CENTIGRADE) = 129.0

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/NOLE 788.84 DENSITY TEMPERATURE VOLUME 포

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION CCEF. *

MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48.23(1944) VISCOSITY OF VAPOR = 5.55-03 CENTIPDISE DIPOLE MOMENT(DEBYES) = 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS DXYGEN INDEX(UNITLESS) = 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

25.0 DEGREES ¥ 1724 END OF COMPOUND EA

PAGE NUMBER B-239

ZHURN. F12 KHIM. 37. 201 (1963)

GENERAL REFERENCE: CML TECH MEMO 31-42 12-9-57 N: DENSITY= .9307 - .00091 *TEMP.(C.) DETERMINED OVER REFERENCE: FMC DA-11-173-AMC-308(A) 1-66 **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 6.52001, 8* 1428.57, C* 147.8 DETERMINED OVER THE TEMPERATURE ***** VOLATILITY(MG/METER CUBED)= .98+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .42+01 *++++ WARNING: THE ABOVE VALUES ARE EXTRAFOLATED OUT OF THE DATA TEMPERATURE RANGE +++++ 40.0 DEGREES CENTIGRADE VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML) = .8943 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: F WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 18.2 SUMMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= 244.8 ESTIMATED BOILING POINT (CENT.) .. - 82-01 VAPOR PRESSURE(TO9R)= DENSITY (G/ML) =

DETERMINED OVER THE TEMPERATURE WERE USED TO CALCULATE THE VISCOSITY REFERENCE: CWL TECH MEMO 31-42 12-9-57 123.0 .0626*TEMP.(C.) 50.0 DEG. CENT. R B= -201.21, C= 31-42 12-9-57 50.0 DEG. CENT. REFERÊNCE:CWL TECH MEMO IPOISE) = 1.677 -1.00990. 27.1630 -25.0 TO FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= EQUATION: SURFACE TENSION(DYNES/CM)= 27.
DETERMINED OVER THE TEMPERATURE RANGE 2P.
WERE USED TO CALCULATE THE SURFACE TENSION VISCOSITY(CENTIPOISE)= RANGE

REFERENCE: CWL TECH NEMO 31-42 12-9-57 REFERENCE: TAG OC. NB10112 P51 24.7 DYNES/CM 20.0 DEG. CENT. # 95.0 REF! REFRACTIVE INDEX(ND) = 1.4480 AT

REFERENCE: NB9283 P61 129.0 FLASH POINT, OPEN CUP(CENTIGRADE) = 9

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. PRESSURE DENSITY TEMPERATURE VOLUNE GM/CC DEG C CC/MOLE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION TOEF. .

17.38

REFERENCE: NAR-CALC ARCSL-TR IN PROGRESS REFERENCE: NB9253 P23 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.87-03 CENTIPOISE DIPOLE MOMENT(DEBYES)= 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROCOXYGEN INDEX(UNITLESS)= 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23

40.0 DEGREES ¥ 1724 END OF COMPOUND EA

PAGE NUMBER 5-240

DATA IGNORED - IN CONTROL

- IN CONTROL MODE PEDF IGNORFO

PBRKPT PRINTS

Appendix B

SSIFIED

GENERAL REFERENCE: CWLR 2346 -40.0 DEGREES CENTIGRADE FORMULA COMMON NAME **** ****

ARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST Boiling point, the values calculated above the data ranges may be above boiling point and not meaningful NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** WARNING: SINCE THERE IS NO VAPOR PRESSURE DATA WARNING: SINCE THERE IS NO VAPOR PRESSURE DATA

.00080 *TEMP.(C.) DETERMINED QVER

DENSITY(G/ML) = 1.0419 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0099 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED DVER THE 86.4 ů -222.82, FOLLOWING ANTOINE CONSTANTS(EATR 4491): A# -.94359, B= -222. PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

7250.587 VISCOSITY(CENTISTOKES)= WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR 2348 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0810+TEMP.(C.) 50.0 DEG. CENT. R 1.5 DYNES/CH 34.5 25.0 10 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM)* DETERMINED OVER THE TEMPERATURE RANGE 工工

REFERENCE: CMLR2346 FLASH PUINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 170.0 FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME DENSITY TEMPERATURE 7.E

ZHURN. FIZ KHIM. 37. 201 (1963)

CC/MOLE 905.43 3108 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 910. DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 3.70-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 23(1944)

-40.0 DEGREES C. ۲ END OF COMPOUND EA 1728

PAGE NUMBER B-241

Appendix B

UNCLA SSIFIED 269

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT AND NOT MEANINGFUL A BOILING POINT AND NOT MEANINGFUL -20,0 DEGREES CENTIGRADE 1728 SUM JARY OF PROPERTIES OF EA

1

DATA TO ESCIMATE

.00080 *TEMP.(C.) DETERMINED DVER 1.0099 --REFERENCE: CWLR 2346 1.0259 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C THE TEMPERATURE RANGE DENSITY (G/ML) =

RANGE OF THE DATA TEMPERATURE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT DETERMINED OVER THE 86.4 75.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 FOLLOWING ANTOINE CONSTANTS(EATR 4491): Am WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE

258.827 VISCOSITY (CENTISTOKES)= OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR 2346 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** .0810*TEMP.(C.) 50.0 DEG. CENT. R 32.9 DYNES/CM 25.0 10 31,3000 ENUATION: SURFACE TENSION(DYNES/CM)= 31. DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TEMSION 표

REFERENCE: CWLR2346 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 170.0 FALLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE 1.E

ZHURN. FIZ KHIM. 37. 201 (1963)

CC/MOLE DENSITY TEMPERATURE VOLUME 23/65 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .023 DIFFUSION COEF.

CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.09-03 MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48.23(1944)

-20.0 DEGREES C. ¥ END OF COMPOUND EA 1728

PAGE NUMBER 8-242

DATA TO ESTIMATE COMMON NAME:

RAING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTI
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL .0 DEGREES CENTIGRADE 1728 SUMMARY OF PROPERTIES OF EA **** EARNING:

.00080 *TEMP. (C.) DEI ERMINED OVER 1.0099 1.0099 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C. DENSITY(G/ML)===1.0099 The temperature range

REFERENCE: CWLR 2346

OF THE DATA TEMPERATURE RANGE ***** WIRNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

DETERMINED OVER THE 86.4 FOLLOWING ANTOINE CGNSTANTS(EATR 4491): A* --94359, B* --222.82, C* FFRLOWINE RANGE 25.0 TO 50.0 DEG. CFNT. REFERENCE:CWLR 2346 TEMPERATURE RANGE 25.0 TO 50.0 DI WERE USED TO CALCULATE THE VISCOSITY

43.237 VISCOSITY(CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0810*TEMP. (C.) 50.0 DEG. CENT. 31.3 DYNES/CM 25.0 TO 31.3000 DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION (DYNES/CM) = Ŧ

REFERENCE: CWLR2346 FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 170.0

FILIPPOV. FULLOWING CRITICAL PROPERTIES WERE ESTIMATE: USING THE METHOD OF DENSITY TEMPERATURE VOLUME PRESSURE 빞

KHIM. 37. 201 (1963)

ZHURN. FIZ

CC/MOLE 905.43

CM.SQ./SEC CALCULATED FOR VAPOR .027 DIFFUSION COEF.

VISCOSITY OF VAPOR = 4.48-03 CENTIPOISE PROPERTIES AND THE CRITICAL ABOVE USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TI MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

AT END OF COMPOUND EA 1728

PAGE NUMBER B-243

SSIFIED

Appendix B

DATA TO ESTIMATE WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST. A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL COMMON NAME: FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 23.16 20.0 DEGREES CENTIGRADE BE VALID UNLESS LIQUID SUPERCOCKS TO SPECIFIED TEMPERATURE **** SUMMARY OF PROPERTIES OF EA

.00080 .TEMP.(C.) DETERMINED OVER - 6600.1 REFERENCE: CWLR 2346 .9339 WAS CALCULATED FROM THE EQUATION: DENSITY= 50.0 DEG. CENT. 25.0 10 THE TEMPERATURE RANGE DENSITY (G/ML) =

OF THE DATA TEMPERATURE RANGE **** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 86.4 -222.82, C= FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.943E9, B= -222. Perature range 25.0 to 50.0 deg. cent. reference:cwlr 23.4 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= TEMPERATURE RANGE

OF THE DATA TEMPERATURE RANGE **** **** WARRING: THE ABOVE VALUES ARE EXTRAPOLATED OUT EQUATION: SURFACE TENSION(DYNES/CM) = 31.
DETERMINED OVER THE TEMPERATURE RANGE 25
WERE USED TO CALCULATE THE SURFACE TENSION THE

REFERENCE: CWLR 2348 10%: SURFACE TENSION(DYNES/CM) = 31,3000 - .0810*TFMP.(C.)
MINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL
JSED TO CALCULATE THE SURFACE TENSION 29.7 DYNES/CM
'AAM': NG: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: CWLR2346 FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) # 170.0

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME

CC/MOLE DENSITY TEMPERATURE GM/CC DEG C Cia/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .031 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.87-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUIHERLANDS EQ., J.PHY.CHEM,48.23(1944)

20.0 DEGREES ۲ 1728 END OF COMPOUND EA

PAGE NUMBER B-244

Appendix B

SSIFIED

ZHURN. FIZ KHIM. 37. 201 (1963)

WARRING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL SINCE THERE IS NO MELTING POINT FUR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: CWLR 2346 25.0 DEGREES CENTIGRADE BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** FORMULA WEIGHT: 281.4 SUMMARY OF PROPERTIES OF EA HARNING:

.00080 *TEMP.(C.) DETERMINED OVER .9899 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.0059 - ANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CMLR 2346

ŧ

DETERMINED OVER THE 86.4 ڹٞ FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= ...94359, B= -222.62, PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 11.400 TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= Drnsity(G/ML) = .9899 THE TEMPERATURE PANGE

.0810*TEMP.(C.) 50.0 DEG. CENT. R 25.0 ro 31.3000 FOUATION: SURFACE TENSION(DYNES/CM)= 出

REFERENCE: CWLR 2346 REFERENCE: CWLR2346 170.0 DETERMINED OVER THE TEMPERATURE RANGE 25 MERE USED TO CALCULATE THE SURFACE TENSION FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)*

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE Ή

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

.033 COE F. DIFFUSTOR ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 4.96-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

25.0 DEGREES C. ¥ 1728 END OF COMPOUND EA

PAGE NUMBER B-245

37. 201 (1963)

ZHURN. FIZ KHIM.

DATA TO ESTIMATE RAING: SINCE THERE IS NO MELTING POINT FOR THIS CCAPPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNIESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT KEANINGFUL GENERAL REFERENCE: CWLR 2346 FORMULA WEIGHT: SUMMARY OF PROPERTIES OF EA **** * WARNING:

.00080 *TEMP. (C.) DETERMINED OVER .9779 WAS CALCULATED FROM THE EQUATION: DENSITY 1.0099 -REFERENCE: CWLR 2346 DENSITY:G/ML) = .9779 THE TEMPERATURE RANGE

DETERMINED OVER THE 86.4 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.94359, B= -222.82, C= ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) # 6.5 THE FOLLOWING ANIO

.0810*TEMP.(C.) 50.0 DEG. CENT. 25.0 10 31,3000 E DUATION: SURFACE TENSION(DYNES/CM) = 31.
DETERMINED OVER THE TEMPERATURE RANGE 25
WERE USED TO CALCULATE THE SURFACE TENSION ΉE

REFERENCE: CWLR 2346 REFERENCE: CWLR2346 170.0 FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE)=

F'LLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE PRESSURE GY/CC DEG C CC/MOLE ATM. 빞

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF.

VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE FILE OF SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.26-03 CENTIPOISE MODIFIED SUTHERLANDS

40.0 DEGREES C. A 1728 END OF COMPOUND EA

PAGE NUMBER 8-246

Appendix B

SSIFIED

DATA TO ESTIMATE RNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST BOILING PUINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL **** "WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ****
**** WARNING: SINCE THERE THE OUTLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO

-40.0 DEGREES CENTIGRADE

SUNDARY OF PROPERTIES OF EA

COMMON NAME:

.0008! *TEMP.(C.) DETERMINED OVER 1.0175 -DENSITY(G/ML)= 1.0498 WAS CALCULATED FROM FHE EQUATION: DENSITY= 1.0175 -The Temperature range 25.0 to 50.0 deg. Cent. Reference: CWLR 2346

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 102.5 -282.37, C* TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 -1.16101, B= FOLLOWING ANTOINE CONSTANIS(EATR 4491): Am 2261.294 VISCOSITY(CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE * : * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR 2348 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE .0837*TEMP.(C.) 50.0 DEG. CENT. 35.6 DYNES/CM 25.0 10 32.3000 WERE USED TO CALCULATE THE SURFACE TENSION DETERMINED OVER THE LEMPERATURE RANGE EQUATION: SURFACE TENSION (DYNES/CM)= THE

20.0 DEGREE CENTIGRADE .200+01 SOLUBILITY(G/100G SOLVENT)

2346

REFERENCE: CNDL

ZHURN. FIZ KHIM. 37. 201(1963) WERE ESTIMATED USING THE METHOD OF FILIPPOY. FOLLOWING CRITICAL PROPERTIES 품

PRESSURE CC/MOLE VOLUME DENSITY TEMPERATURE 482.88 GM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .019 DIFFUSION COEF.

PROPERTIES AND THE F YAPOR = 3.72-03 CENTIPOISE VISCOSITY OF ABOVE CRITICAL VAPOR WAS ESTIMATED USING THE EQ. J.PHY.CHEM, 48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

-40.3 DEGREES 4 1763 END OF COMPOUND EA

PAGE NUMBER B-247

Appendix B

LASSIFIED

NO VAPUR PRESSURE DATA TO ESTIMATE WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPUR PRESSURE DATA TO EST. A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT REFERENCE: CWLR 2346 -20.0 DEGREES CENTIGRADE BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE WE IGHT: SUNMARY OF PROPERTIES OF

.00081 *TEMP.(C.) DETERMINED OVER REFERENCE: CWLR 2346 1.0175 1.0337 MAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C HE TEMPERATURE RANGE DENSITY (G/ML) =

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 102.5 ů -1.16101, B= -282.37, 50.0 DEG. CENT. REFERENCE: CWLR 2346 FOLLOWING ANTUINE CONSTANTS(EATR' 4491): A= THE

182.054 TEMPERATURE RANGE 25.0 TO 50.0 DE VISCOSITY(CENTISTOKES)*

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

50.0 DEG. CENT. 25.0 10 DETERMINED OVER THE TEMPERATURE RANGE 28 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 34.0 DYNES/CM

ZHURN. FIZ KHIM. 37. 201(1963) WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE FOLLOWING CRITICAL PROPERTIES 뿔

REFERENCE! CWDL

20.0 DEGREE CENTIGRADE

.200+01 AT

SOLUBILITY (G/1005 SOLVENT)

CC/MOLE VOLUME DENSITY TEMPERATURE GM/CC DEG C

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .023 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.11-03 VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE IFIED SUTHERLANDS EQ., J. PHY.CHEM.48,23(1944) ADDIFIED SUTHERLANDS

-20.0 DEGREES C. ¥ 1763 END OF COMPOUND EA

PAGE NUMBER 8-248

Appendix B

^業 SSIFIED 276

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL CALCULATION OF VALUES BELOW DATA RANGE MAY NOT GENERAL REFERENCE: WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATE BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

.00081 +TEMP.(C.) DETERMINED OVER 1.0175 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0175 - RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 DENSITY(G/ML)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

THE TEMPERATURE RANGE

DETERMINED OVER THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1 '51C1, B* -282.37, C* 102.5 PERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 TEMPERATURE RANGE

39.163 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE * + * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

REFERENCE: CWLR 2348 .0837*TEMP.(C.) 50.0 DEG. CENT. 32.3000 **-**25.0 TO DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION. EQUATION: SURFACE TENSION (DYNES/CM) = 175

WERE USED TO CALCULATE THE SURFACE TENSION: 32.3 DYNES/CM

REFERENCE: CWDL 2346 AT . 200+01 SOLUBILITY (G/100G SOLVENT)

20.0 DEGREE CENTIGRADE

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE DENSITY TEMPERATURE VOLUME 뿔

18.04 CC/MOLE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .027 DIFFUSION COEF.

VISCOSITY OF VAPOR # 4.51-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM. 48, 23(1944)

.O DEGREES C. ۲ 1763 END OF COMPOUND EA

PAGE NUMBER 8-249

Appendix B

SSIFIED

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO 20.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

Sales Contraction

.00081 +TEMP.(C.) DETERMINED DVER DENSITY(G/ML) = 1.0013 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 - THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER 102.5 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.16101, B= -282.37, C= ERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346 TEMPERATURE RANGE

13.912 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)=

**** WARKING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

.0837*TEMP.(C.) 50.0 DEG. CENT. 30.6 DYNES/CM 32.3000 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM)= 32. DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION 뽀

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

.200+01 AT

SOLUBILITY (G/100G SOLVENT)

REFERENCE: CWDL 2346

20.0 DEGREE CENTIGRADE

ZHURN. FIZ KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. PRESSURE CC/MOLE VOLUME DENSITY TEMPERATURE 뿔

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .032 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.90-03 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE IFLED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

20.0 DEGREES C. 4 1763 END OF COMPOUND EA

PAGE NUMBER 8-250

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 25.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

10.00

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

.00081 +TEMP.(C.) DETERMINED OVER ı DENSITYIG/ML; = .9973 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 -The Temperature Range 25.0 to 50.0 deg. cent. Reference: CWLR 2346

DETERMINED OVER THE 102.5 75.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A.

TEMPERATURE RANGE 25.0 TO 50.0 DE WERE USED TO CALCULATE THE VISCOSITY (CENTISTOKES)= 11.2 THE EQUATION: SURFACE TENSION (DYNES/C

REFERENCE: CWDL 2346 REFERENCE: CWLR 2346 .0837*TEMP. (C.) 50.0 DEG. CENT. 30.2 DYNES/CM 32.3000 -25.0 TO DETERMINED OVER THE TEMPERATURE RANGE 25 WERE USED TO CALCULATE THE SURFACE TENSION SOLUBILLITY(G/100G SOLVENT) EQUATION: SURFACE TENSION (DYNES/CM) = 776

DEGREE CENTIGRADE 20.0

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE CC/MOLE 898.28 VOLUME GAZCC DEG C 3133 482.89 8 뿔

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF.

CENT IPO 1 SE OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE ERLANDS EQ., J.PHY.CHEM.48.23(1944) MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944) VISCOSITY H

25.0 DEGREES ¥ 1763 END OF COMPOUND EA

PAGE NUMBER 8-251

ZHURN. FIZ KHIM. 37. 201 (1963)

NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL GENERAL REFERENCE: CWLR 2346 40.0 DEGREES CENTIGRADE FORMULA WEIGHT: 281.4 1763 OF PROPERTIES OF EA COMMON NAME: SUMMARY TONING A SEC

のなる。本人の名と

.00081 *TEMP.(C.) DETERMINED OVER 1 REFERENCE: CWLR 2346 SITY(G/ML)= .9352 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0175 TEMPERATURE RANGE 25.0 TG 50.0 DEG. CENT. REFERENCE: CWLR 2346 = (TW/5) LISNED Ŧ

DETERMINED OVER THE 102.5 THE FOLLOWING ANTOINE CONSTANTS(EATR 449!): A= -1.16101, B= -282.37, C= TEMPERATURE HANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346 WERE USED TO CALCULATE THE VISCOSITY 6.508

REFERENCE: CWDL 2346 REFERENCE: CWLR 2346 50.0 DEG, CENT. RI 29.0 DYNES/CM 20.0 DEGREE CENTIGRADE .0837*TEMP.(C.) 32.3000 -25.0 TO EQUATION: SURFACE TENSION(DYNES/CM)= 32, DETERMINED OVER THE TEMPERATURE RANGE 29 WERE USED TO CALCULATE THE SURFACE TENSION .200+01 AT SULUBILITY(G/100G SOLVENT) TH

WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE FOLLOWING CRITICAL PROPERTIES CC/MOLE 898.28 DENSITY TEMPERATURE VOLUME 482,88 G:4/CC . 3133

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.29-03 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) 뮢

40.0 DEGRESS C. AT 1763 END OF COMPOUND EA

NUMBER 8-252

PAGE

Appendix B

植物状件关

17 SSIFIED CL

COMMON NAME: FORMULA WEIGHT: 210.2 GENERAL REFERENCE: ARCSL-TR-77001 SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT -40.0 DEGREES CENTICRADE SUMMARY OF PROPERTIES OF EA

CANADAM PROSECUL RASSESSE TO SECOND

The state of the s

The state of the s

DETERMINED OVER THE 273.2 8.41620, 8= 2860.40, C= REFERENCE: ARCSL-TR-77001

TEMPERATURE RANGE ... OT TO 50.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FULLOWING FOUN PROPERTIES: VAPOR PRESSURE(TORR) ... 14-03 ESTIMATED BOILING FOINT(CENT.) ... 243.6

VOLATILITY(MG/METER CUBED) = .20+01 VOLATILITY(MILLIMOLE/ METER CUBED) = ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILITY(MG/METER CUBED)= .20+01

DENSITY(G/ML)= 1.0359 WAS CALCULATED FROM FHE EQUATION: DENSITY= 1.6059 - .00075 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

RANGE ****

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 236.4 ö VE CONSTANTS(EATR 4491): A* -2.13730, B* -709.95, (25.0 TG 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 FULLOWING ANTOINE CONSTANTS (EATH 4491): A. TEMPERATURE RANGE

WERE USED TO CALCULATE THE VISCOSITY 30.028

*:*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: ARCSL-TR-77001 FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = '118.0

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure 176

CENSITY TEMPERATURE VOLUME PRESSURE CM/CC DEG C CC/MOLE ATM. 3063 523.30 686.19 24.87

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 3.71-03 VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J. PHY.CHEM, 48,23(1944) VISCOSITY OF THE

END OF COMPOUND EA 2261 AT -40.0 DEGREES C.

NUMBER B-253

PAGE

UNCLASSIFIE

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.41620, B= 2860.40, C* 273.2 DETERMINED OVER THE TEMPERATURE RANGE .6 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 GENERAL REFERENCE: ARCSL-TR-77001 VOLATILITY(MG/METER CUBED) ... 17+02 VOLATILITY(MILLIMOLE/ METER CUBED)83-01 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(1048)= .13-02 13.1 SUMMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= ESTIMATED BOILING PUINT (CENT.) =

... LENGLIT = 1.0059 - .00075 *TEMP.(C.) DETERMINED OVER REFERENCE: ARCSL-TR-77001 1.0209 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: A THE TEMPERATURE RANGE FNSITY(G/ML)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 236.4 'S(EATR 4491): A= -2.13730, B= -709.95, C= 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 **** WARNING: THE ABOVE VALUES ARE EXTRAPOL WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)= 25.0 10

OF THE DATA TEMPERATURE RANGE * * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

REFERENCE: ARCSL-TR-77001 118.0 FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 24.87 CC/NOLE 536.19 H

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .028 DIFFUSION COEF. #

VISCOSITY OF VAPOR = 4.10-03 CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)

-20.0 DEGREES ۲ 2261 END OF COMPOUND EA

PAGE NUMBER 8-254

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLCWING ANTOINE CONSTANTS(EATR 4491): A* 8.41620, B* 2860.40, C* 273.2 DETERMINED OVER THE

TEMPERATURE RANGE .0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 GENERAL REFERENCE: ARCSL-TR-77001 . O DEGREES CENTIGRADE 210.2 FORMULA WEIGHT: WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES SUNMARY OF PROPERTIES OF EA ESTIMATED BOILING POINT (CENT.) = 243,6
HEAT O' VAPORIZATION (XILOCALORIES/MOLE) = VAPOR PRESSURE(TORR)=

.00375 +TEMP. (C.) DETERMINED OVER REFERENCE: ARCSL-TR-77001 DENSITY(G/ML) = 1.0059 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0059 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0059 --DENSITY(G/ML)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE -2.13730, B= -709.95, C= TEMPENATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) = 7.343 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A=

**** WARNING: THE ABOVE VALUES ARE EXTRAPQLATED DUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: ARCSL-TR-77001 118.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)*

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 1.E

ATM. VOLUME CC/MOLE

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

VISCOSITY OF VAPOR . 4.50-03 CENTIPDISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.FHY.CHEM.48,23(1944)

.O DEGREES C. 7 2261 END OF COMPOUND EA

PAGE NUMBER B-255

2MURN. F12 KHIB. 37. 201(1963)

VOLATILITY(MG/METER CUBED)= .52+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .25+01 Density(g/ml)= .9909 was calculated from the Equation: Density= 1.0059 - .00078 •TEMP:(C.) Determined over The Temperature range 25.0 to 45.0 deg. Cent. Reference: Arcsl-18-77001 INING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

ING ANTOINE CONSTANTS(EATR 4491): A = 8.41620, B = 2860.40, C = 273.2 TERMINED OVER THE 20.0 DEGREES CENTIGRADE REFERENCE: ARCSL-18-7700 BE VALID UNLESS LIVES (EATR 4491): A= 8.41620, B= 2860.40, V= 210.2 FORMULA WEIGHT: WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES 13.1 ESTIMATED BOILING POINT (CENT.) = 243.6
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = ESTIMATED BOILING POINT (CENT.) . VOLATILITY (MG/METER CUBED)=

DETERMINED OVER THE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 236.4 -2.13730, 8= -709.95, C* 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 FOLLOWING ANTOINE CONSTANTS (EATR 4491): A. 4.282 TEMPERATURE RANGE 25.0 TO 45.0 DE MERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES).

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE BANGE ***** REFERENCE: ARCSL-TR-7700 FLASH POINT, MCCUTCHAN-YDUNG(CENTIGRADE)= 118.0

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON PRESSURE ATR 24.87 VOLUME CC/MOLE DENSITY TEMPERATURE FIED

DIFFUSION COEF. # .039 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

VISCOSITY OF VAPOR . 4.89-03 CENTIPOISE THE VISCOSITY OF THE VAPOR MAS ESTIMATED USING THE ASOVE CRITICAL PROPERTIES AND THE MCDIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF. COMPOUND EA 2261 AT 20.0 DEGREES C.

2574 E-758

UNCLASSIFIED

The state of the s

2.00

ZHOWN. FIZ KHIM. 37. 201(1963)

REFERENCE: ARCSL-TR-77001

118.0

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) =

.33+01 .00075 *TEMP.(C.) DETERMINED DVER COMMON NAME: FORMULA WEIGHT: 210.2 GENERAL REFERENCE: ARCSL-TR-77001 NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** DETERMINED OVER THE 25.0 DEGREES CENTIGRADE REFERENCE: ARCSL-TR-77001 273.2 1th CUBED)* .75+93 VOLATILITY(MILLIMOLE/ METER CUBED)* .9872 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0059 -2860.40, C= REFERENCE: ARCSL-TR-77001 8.41620, B= 2261 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: OF PROPERTIES OF EA THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): Am ESTIMATED BOILING POINT(CENT.)* 243.6 HEAT OF VAPORIZATION(KILOCALD91ES/MOLE)* VOLATILITY (MG/METER CUBED)= VAPOR PRESSURE(TORR)= THE TEMPERATURE RANGE Det:SITY(G/ML)= *ARKING:

236.4 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.13730, B= -709.95, (TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 THE FULLOWING ANTOINE CONSTANTS (EATR TEMPERATURE RANGE 25.0 TO 45.0 DE WERE USED TO CALCULATE THE VISCOSITY 3.7

DETERMINED OVER THE

FALLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

PRESSURE VOLUME CC/MQLE DENSITY TEMPERATURE 523.30

THE VISCOSIIY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.99-03 CENTIPOISE .040 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

25.0 DEGREES ¥ 2261 END OF COMPOUND EA

PAGE NUMBER 8-257

Appendix B

ASSIFIED
285

DETERMINED OVER THE

236.4

ZHURN. FIZ KHIM. 37. 201(1963)

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.41620, B* 2850.40, C* 273.2 DETERMINED OVER THE

TEMPEPATURE RANGE .0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 GENERAL REFERENCE: ARCSL-TR-77001 40.0 DEGREES CENTICRADE FORMULA WEIGHT: 210.2 TEMPEPATURE RANGE .0 TO 50.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: SUNJARY OF PROPERTIES OF EA VAPOR PRESSURE(TORR)=

.00075 *TEMP.(C.) DETERMINED OVER .98+01 REFERENCE: ARCSL-TR-77001 ESTIMATED BOILING POINT(CENT.)= 243.6

HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.1

VOLATILITY(MG/METER CUBED)= .21+04 VOLATILITY(MILLIMOLE/ METER CUBED)=
DENSITY(G/ML)= .9759 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0059 -THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770

ESTIMATED BOILING POINT(CENT.)=

THE FOLLOWING ANTOINE CCNSTANTS(EATR 4491): A* -2.13730, B= -709.95, C= IEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES).

REFERENCE: ARCSL-TR-77001 118.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)*

PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ATM. 24.87 FOLLOWING CRITICAL PROPERTIES USINSTY TEMPERATURE VOLUME OF C./MOLE 686.19 523.30 :3063

CM.SQ./SEC CALTULATED FOR VAPOR IN AIR DIFFUSION COEF.

CENTIPOISE ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.29-03 THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING TI

40.0 DEGREES C. ¥ 2261 OF COMPOUND EA

8-258

PAGE NUMBER

Appendix B

GENERAL REFERENCE: ARCSL-TR-77001 TFEREFORE THE LIQUID PROPERTIES ARE DETERMINED OVER THE 2337 AT THE MELITING POINT IN LIKU OF -40 DEG RANGE **** VOLATILITY(MG/WETER CUBED)= .27+02 'OLATILITY(MILLIMOLE/ METER CUBED)= ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 273.2 'OLATILITY(MILLIMOLE/ METER CUBED)= MENEWATURE RANGE 127.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: COMMON NAME: FORMULA WEIGHT: 198.2
**** AARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT.
VALID CNLY FOR SUPECOCLED LIQUID AND NOT THE SOLID ***** SUNMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .27+02 VAPOR PRESSURE(TORR)= .19-02 ESTIMATED BOILING POINT(CENT.)= 178.1

フェイン 名画館 かいかいしょ かいかい から 日本国際の サンサンチング しゅうだんしゅう

RANGE REFERENCE: ARCSL-TR-77001 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE DENSITY(G/M) = 1.0379 WAS CALCULATED FROM THE EQUATION: DENSITY* THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CEN). REFERENCE: A

.00095 +TEMP. (C.) DETERMINED OVER

DETERMINED OVER THE

160.2

FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.27820, B= -313.12, C* PERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77301 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTUKES) * TEMPERATURE RANGE

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

REFERENCE: ARCSL-TR-77001 MELTING POINT (DEG. CENT.) * -19.0 REFEFENCE: ARCSL-TR-77001 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) * 105.0 REFERENCE: A

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE WETHOD OF FILIPPOV PRESSURE DENSITY TEMPERATURE VOLUME GA/CC DEG C CC/MOLE .3313 406.85 598.28 Ξ

ZHURN. FIZ KHIM. 37. 201 (1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) EQ., J.PHY.CHEM.48,23(1944)

-40.0 DEGREES AT END OF COMPOUND EA

UNCLASSIFIED

.00095 +TEMP.(C.) DETERMINED QVER GENERAL REFERENCE: ARCSL-TA-77001 THEREFORE THE LIQUID PROPERTIES ARE DETERMINED OVER THE -20.0 DEGREES CENTIGRADE 273.2 VOLATILITY(MG/ME/ER CUBED)* .20+03 VOLATILITY(MILLIMOLE/ METER CUBED)*
DENSITY(G/ML)* 1.0639 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0499 THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77(THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.85660, B* 2696.80, C* TEMPERATURE RANGE -27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURL(TORR)* .16-01 ESTIMATED BOILING POINT(CENT.)* 178.1 HEAT OF VAPORIZATION WINTERFORM VALID ONLY FIR SUPECCULD LIQUID AND NOT THE SOLID **** FOPMULA WEIGHT: ¥ 2337 SUNTARY OF PROPERTIES OF EA COMMON NAME:

DETERMINED OVER THE 160.2 THE FOLLOWING ANTOINE CONSTANTS(EATH 4491): A= -1.27820, B= -313.12, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTUKES)= 9.020

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE GANGE ****

REFERENCE: ARCSL-TR-77001

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED CUT OF THE DATA TEMPERATURE RANGE

MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001 FLASH FUINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 105.0 REFERENCE: ARCSL-TR-77001

ZHURN. #12 KHIM. 37. 201(1963) FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPONDENSITY TEMPERATURE VOLUME PRESSURE

400.85

SC/NOTE

20/4.0

CM.SQ. / SET CALCULATED FOR VAPOR IN A 19 .031 DIFFUSION COEF. *

VISCOSIIV OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE IFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.87-03 CENTIPOISE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)

-20.0 DEGREES C. ·¥ END OF COMPOUND EA 2337

PAGE NUMBER 8-260

FIED 288

Appendix B

GENERAL REFERENCE: ARCSL-TR-77001 1 2337 AT .0 DEGREES CENTIGRADE FORMULA WEIGHT: 198.2 2337 SUMMARY OF PROPERTIES OF EA

DETERMINED OVER THE 273.2 THE FULLDWING ANTOINE CONSTANTS (EATR 4491): A. B.OSESO, B. 2696.80, C. TEMPERATURE RANGE -27.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CHOLOLAYE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)=

.57+01 .00095 *TEMP.(C.) DETERMINED OVER ESTIMATED BOILING POINT(CENT.): 178.1
HEAT OF VAPORIZATION(KILDCALORIES/MOLE): 12.3
VOLATILITY(MC/METER CUBED): .11+04 VOLATILITY(MILLIMOLE/ METER CUBED):
DENSITY(G/ML): 1.0499 WAS CALCULATED FROM THE EQUATION: DENSITY: 1.0499 - .0
THE TEMPERÂTURE HANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

*,*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 166.2 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.27820, B= -313.12, Cr TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 THE FOLLOWING ANTOINE CONSTANTS (EATR DEED THE RANGE 25.0 TO 45.0 DI WERE (ISEO TO CALCULATE THE VISCOSITY

4.747 VISCOSITY (CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

MELTING POINT (DEG. CENT.) = -19.0 REPERENCE: ARCSL-TR-77001 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 105.0 REFERENCE: ARCSL-TR-7700

ZHURN, FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure a 王

ATE. CC/MOLE 598.28 400.85 ט פינט G#/CC . 3313 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .037 DIFFUSION COEF.

CENT I POI SE VISCOSITY OF THE VAFOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE IFTED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR * 5.33-03 MODIFIED SUTHERLANDS EQ., J.PHY, CHEM, 48.23(1944)

.O DEGREES C. ¥ 2337 END OF COMPOUND EA

PAGE NUMBER B-261

GENERAL REFERENCE: ARCSL-TR-77001 20.0 DEGREES CENTIGRADE 198.2 FORMULA MEIGHT: = 2337 E. SURLIARY OF PROPERTIES OF : BHY W NOWWOO

473.2 DETERMINED OVER THE ů 8.85660.8= 2896.80, C= REFERENCE: ARCSL-18-77001 THE FOLLOWING ANTOINE COUSTANTS (ELTR 4491): Am 6C.O DEG CENT. -27.0 10 TEMPERATURE SANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

ESTERATED BOLLING POINT(CENT.)= 178.1 HEAT OF VAPORIZATION(MILOCALORIES/MOLE)= 12.3

.00095 *TEMP.(C.) DETERMINED OVER VOLATÍLIY(MG/METER CUBED)= .49+04 VOLATÍLITY(MILLIMOLE/ METER CUBED)= CENSITY(G/ML)= 1.0309 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0499 - .0(THE TEMPERATURE RANGE 25.0 ID 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

*.*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED CUT OF THE DATA TEMPERATURE HANGE

DETERMINED 150.2 THE FOLLOWING ANIOINE CONSTANTS(EATR 4491): A= -1.27829, B= -313.12, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-18-77001

OVER THE

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 2.880

**** **** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

ARCSL-TR-77001 REFERENCE: ARCSL-TR-77001 MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 105.0 MELTING

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure HE

ZHUPN. FIZ KHIM. 37. 201 (1963)

HE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE ME DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. .3313 406.85 598.28 24.36

VISCOSIT OF VAPOR # 5.73-03 CENTIPOISE ABGVE CRITICAL PROPERTIES AND THE VAPOR WAS ESTIMATED USING THE THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING !! Piddified Sutherlands Eq., J.Phy.Chem,48,23(1944)

CM.SQ./SEC CALCULATED FOR VAPOR

.043

DIFFUSION CORP.

R A IR

END OF COMPOUND EA 2337 AT 20.0 DEGREES C.

PAGE NUMBER B-262

Appendix B

のでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmのでは、100mmの

UNCLASSIFIED

201 (1963)

ZHURN. FIZ KHIM. 37

25.0 DEGREES CENTIGRADE FURMULA WEIGHT: 2 SUMMARY OF PRUPERTIES OF COMMON NAME:

GENFRAL REFERENCE: ARCSL-18-77001 273.2 DETERMINED CVER TEMPERATURE RANGE -27.0 TO 60.0 DEG. CEMT. REFERENCE: ARCSL-TR-77001 MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: 198.2

. 65+00 VAPOR PRESSURE(TORRI-

.00095 *TEMP.(C.) DEFERMINED OVER .35+02 REFERENCE: ARCSL-TR-77001 ESTIMATED BOILING POINT(CENT.) = 178.1
HEAT OF VAPORIZATION(MILCGCACORTES/MOLE) = 12.3
VOLATILITY(MG/METER CUBED) = .69+04 VOLATILITY(MILLIMOLE/ METER CUBED) = DENSITY(G/ML) = 1.0262 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0499 - THE TEMPERATURE RANGE 25.0 IC 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770

DETERMINED SYER 160.2 THE FOLLOWING ANDOINE CONSTANTS(EATR 4491): A= -1.27820, 6= -313.12, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY

2.585 VISCOSIIY(CENTISTOKES)= WELTING FOINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-7700; Flash Point, McCutchan-Young(Centigrade)= 105.0 Reference: Arcsl-tr-7700;

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

USING THE METHOD OF FILIPPOV.

UNICO DEG C CC/NOLE ATM. 24.35 30.8 . **85**

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 470. DIFFUSION COES. *

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR . 5.90-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MUDIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

25.0 DEGREES C. ¥ 2337 END OF COMPOUND EA

PAGE NUMBER 8-263

Appendix B

ASSIFIED

ZHURK. FIF KHIM. 37. 201 (1963)

GENERAL REFERENCE: ARCSL-TR-77001 40.0 DEGREES CENTIGRADE FORMULA METGHT: 233 SAMBIARY OF PROPERTIES OF EA COMMON WANTER

DETERMINED OVER THE 273.2 TEMPERATURE RANGE -27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE FOILOWING FOUR PROPERTIES:

HEAT OF VAPORIZATION(KILDCALORIES/WOLE)* 12.3 VOLATILITY(MG/METER CUBED)* 18+05 VOLATILITY(MILLIMOLE/ METER CUBED)* Density(G/ML)* 1.0119 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.0439 --ESTIMATED BOILING POINT(CENT.)* 178.1 HEAT OF VAPORIZATION(KILDCALDRIES/MOLE)*

REFERENCE: ARCSL-TR-77001 45.0 DEG. CENT. 25.0 70 THE TEMPERATURE TANGE

DETERMINED OVER THE 180.2 TEMPERATURE RANGE 15.0 TO 49.0 DEG. CENT. REFERENCE:AGCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTUKES) = 1.931

REFERENCE: ARCSL-TR-77001 KELTING POINT (DEG. CENT.) = -19.0 REFERENC! FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 105.0

REFERENCE: ARCSL-TR-77001

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE STHE

ATM CC/NOLE 406.85 . 3313 22/15

.049 CM.SQ./SEC CA! ULATED FOR VAPOR IN AIR DIFFUSION COEF. #

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.24-03 CENTIPOLSE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MADDIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

40.0 DEGREE F. W 2337 END OF COMPOUND EA

PAGE NUMBER B-264

Appendix B

*

**** WARNING: SINJE THERE IS NO MELTING POINT FORMULA WEIGHT: 182.2 GENERAL REFERENCE: ARCSL-TR-77001
3E VALIDEDNESS LIGUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****
THE FOLLOWING ANYOUNE CONSTANTS(EATR 4491): A = 8.77900. B = 2779 A.C.

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: ESTIMATED BOILING POINT CENT.) = 197.9

HEAT OF VAPORIZATION(KILOCALORIES/MO!E)= 12.7 VOLGTILITY(MG/WETER CUBED)= .92+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .50-01 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED CUT OF THE DATA TEMPERATURE AANGE ******

.00105 *TEMP.(C.) DETERMINED DVER N: DENSITY 1.1731 - . (
REFERENCE: ARCS(-74-7700) DENSITY(G/ML) = 1.2151 WAS CALCULATED FROM THE EQUATION: DENSITY= The Temperature Range 25.0 To 45.0 Deg. Cent.

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 212.3 THE FULLOWING ANTOLIVE CONSTANTS(EATR 4491)? A. -1.54720, BS -439.67, C. JAPERATURE RANGE 25.0 TO 45.0 DEG. CEMT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY

10.095 VISCOSITY(CENTIBROKES)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: ARCSL-TR-77001 98.0 FLASH POINT, MC,UTCHAN-YOUNG(CENTIGRADE) .

ZHURN. FIZ KHIM. 37, 201(1963) THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE

DENSITY TEMPERATURE VOLUME GA/CC DEG C CC/MOLE 3694 412,79 493,30

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 650. PIFFUSION COEF. .

VISCOSITY OF VAPOR - 4.79-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MADIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944)

-- 40.0 DEGREES C. Y1 2361 END OF COMPOUND EA

PAGE NUMBER B-265

Appendix B

SSIFIED

.00105 *TEMP.(C.) DETERMINED DVER **** #ARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUE REFERENCE: ARCSL-TR-77001

DE VALID UNLESS LÍQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****

THE FULLOWING ANTOINE CONSTANIS(EATR 4491): A** 8.77900, B** 2778-10, C* 273-2 DETERMINED OVER THE WERE USED TO CALCULATE THE FOLLOWING FOULD FOUR PROPERTIES: -20.0 DEGREES CENTIGRADE VOLATILITY(MG/METER CUBED)= .74+02 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.1941 MAS CALCULATED FROM THE EQUATION: DENSITY= 1.1731 -THE TEMPERATURE RANGE 25.0 IQ 45.0 DEG. CENT. REFERENCE: ARCSL-TK-770 2361 SUNGARY OF PROPERTIES OF EA ESTIMATED BOILING POINT(CENT.) # 197.3
HEAT OF VAPURIZATION(KILOCALORIES/MDI.E) #
VOLATILITY(AG/METER CUBED) # 74+02 MAPOR PRESSURE(TORR) =

DETERMINED OVER THE * * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 212.3 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -1.54720, B= -439.37, C* Perature range 25.0 to 45.0 deg. cent. Reference:Arcsl-tr-77001 THE FOLLOWING ANTOINE CONSTANTS(EATR 449)
TEMPERATURE RANGE 25.0 TO 45.0 DEG.
WERE USED TO CA ACULATE THE VISCOSITY
VISCOSITY(CANTISTOKES)* 5.480

REFERENCE: ARCSL-TH-77001

5.480

* * * * * WARNING: THE ABOVE VALUES ARE EXTRAFOLATEG OUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: ARCSL-1R-77001 96.0 FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)=

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE WETHOD OF FILIPPOV. Density temperature volume pressure 29.80 SC/NOLE 493.30 DEG C 1694

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF.

CENT POISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR - 5.28-03 ESTIMATED USING THE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHIRLANDS EQ., J.PHY.CHEM.48,23(1944)

-20.0 DEGREES C. ¥ END OF COMPOUND EA 2361

PAGE NUMBER 8-266

Appendix B

FIED 294

201 (1963)

ZHURN. FIZ KHIM. 37

.00105 *TEMP. (C.) DETERMINED DVER COMMON NAME:

CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

B. VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.77900, B* 2778.10, C* 273.2 DETERMINED DVER THE

TEMPERATURE RANGE -25.0 TO . 0 DEG. CENT. REFERENCE: ARCSL-TR-77001 . O DEGREES CENTIGRADE DEMSITY(G/ML) = 1.1731 WAS CALCULATED FROM THE EQUATION: DEMSITY = 1.1731 WAS CALCULATED FROM THE EQUATION: DEMSITY = 1.1731 - 11731 -2361 WENE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES 12.7 SUMMARY OF PROPERTIES OF EA HEAT OF VAPORIZATION (KILOCALORIES/MOLE)= 197 ESTIMATER BOILING POINT (CENT.)= 41-01

..... MARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE REFERENCE: ARCSL-18-7709

DETERMINED OVER THE 212.3 -1.54720, B* -439,67, C# FOLLOWING ANTOINE CONSTANIS(EATR 4491): A= -1.54720, B= -439.67, (PERATURE RANGE 25.0 TO 45.0 DEG. CENY. REFERENCE:ARCSL-TR-77001 3.338 TEMPERATURE RANGE 25.0 TO 45.0 DEWERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES) 3

***** WIRNING: THE ABOVE VALUES ARE EXTRAPOLATED (WIT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: ARCSL-TR-77001 96.0 FLASH PCINT, MCCUTCHAN-YOUNG(CENTIGRADE) =

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE ATM. CC/MOLE DEG C يِّ FIED

CM.SO./SEC CALCULATED FOR VAPOR IN AIR .042 DIFFUSION COEF. .

VISCOSITY OF VAPOR - 5.78-03 CENTIPOLISE VISCOSI IY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SU'HERLANDS EQ., J.PHY.CHEM, 48,23(1944)

.O DEGREES C. ¥ END OF COMPOUND EA 2381

PAGE NUMBER 8-267

Appendix B

.

295

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RACSL-TR-77001

VE VALID UNLESS LIQUID SUPERCOOLS TO SPECIF.ED TEMPERATURE *****

TEMPERATURE RANGE -25:0 TO .0 P.C. CENT. REFERENCE: ARCSL-TR-77001

WARE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
ESTIMATE RANGE -25:0 TO .0 P.C. CENT. REFERENCE: ARCSL-TR-77001

ESTIMATE OF CALCULATE THE FOLLOWING FOUR PROPERTIES: VOLATIL!TY(MG/METER CUBED)= .20+04 VOLATILITY(WILLIMOLE/ METER CUBED)= .11+02 ++++* W.RNING: THE ABOVE VALUES ARE EXTRAPOLATED CUIT OF THE DATA TEMPERATURE RANGE ***** 12.7 ESTIMATED BOILING POINT(CENT.): 197.9
HEAT OF VAPORIZATION(KILOCALDRIES/MOLE):
VOLATIL: TY (MG/METER CUBED): .20+04

パストローマングラン・エー

DENSITY19/ML)= 1.1521 WAS CALCULTED FROM THE EQUATION: DENSITT= 1.1731 - .00105 *TEMP.(C.) DETERBINFO OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

**** WERNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 212.3 THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCS: -TR-7

THE TOLLOWING ANTOINE CONSTANTS(EATR 4491): As -1.54720, 3s -439.67, C = 212.3

TEMPERATURE HANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCS. -TR-7700;

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISIONES) = 2.214

**** MANNING: THE ABCZE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

FLASH POINT, MCGUICHAN-YOUNG(CENTIGRADE) = 96.0 REFERENCE: ARCS. -TR-77

THE FOLLOWING, CRITICAL FRODERTIES WERE ESTIMATED USING THE METHOD OF FILTPPOV.

**** ***** WASHING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE! ARCSL-TR-7700

PRESSUAE ATR CC/NOLE 493.30 EMPERATURE VOLUME

ZHURN. FIZ KHIM. 37. 201(1983)

CM.SQ./SFC CALCULATED FOR VAPOR IN AIR .049 DIFFUSIOR COEF. *

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 6.27-42 CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUIPERLANDS EQ., J. PHY. CHEM, 48, 23(1944)

PACE NUMBER 8-268

20.0 DEGREES C.

7

2361

END OF COMPCUND EA

Appendix B

**** MARNING: SINCE THERE IS NO MELTING POINT FORMULA WEIGHT: 182.2

GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE COASTAIRS SUPERCOURS TO SPECIFIED TEMPERATURE *****

TEMPERATURE RANGE -25.0 TO DETERMINED OVER THE C 77900, 8" 2778.10, C# 273.2 REF 9ENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES. .0 DEG. CENT. HEAT OF VAPORIZATIONIKILOCALDRIES/MOLE) = ENTIMATED BOILING PUINT (CENT.) # 197.9 TEMFCHATURE RANGE -25.0 TO WAPOR PRESSURE(TORR)=

MEDICAL MANAGEMENT

-00105 -TEMP.(C.) (ETERMINED DVER VOLATILITY(MG/NETER CUBED)* .28+64 VDLATILITY(MILLIMOLE/ METER CUBED)* 18+32 ***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT DF 14E DATA TEMPERATURE RANGE ***** REFERENCE: ARCSL-TR-77001 1.1468 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.1731 -- RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-19-77 THE TEMPERATURE RANGE DENSITY (G/ML) =

DETERMINED GVER THE 212.3 45.0 DEG. CFMT. REFERENCE: ARCSL-TR-77001 -1.54720. B. -435.67. CONTING ANTOINE CONSTANTS(EATH 4491): Am 2.020 TEMPERATURE RANGE 25.0 TC 45.0 DE VISCOSITY(CENTISTOKES). THE CONTING ANTE

REFERENCE: ARCSL-TR-7700; FLASH POINT, MCCUTCHAM-YOUNG(CENTIGRADE). . 96.0

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density Temperature Volume Pressure DENSITY FEMPERATURE VOLUME 493.50 412.79 3694 J.T.

THE VISCOSITY OF THE YAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE WOSIFIED SUTHERLANDS EQ., J.PHY.CHEM.40.23(1944) VISCOSITY OF VAPOR * 8.39-03 CENTIPOISE

END OF COMPOUND EA 2361 AT 25.0 DEGREES C.

PAGE NUMBER 8-269

Appendia is

UNCLASSIFIED

ZHURN. FIZ KHIM. 37. 201(1963)

SUMMARY UF PROPERTIES OF EA 236! AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 182.2 GENERAL REFERENCE: ARCSL-TR-77001

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.77900, B* 2778.10, C* 273.2 DETERMINED DVER THE TEMPERATURE RANGE -25.0 TO .0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULAR THE FOLLOWING FOUR PROPERTIES:

VOLOWING PRESSURE(TORR) = .8197.9

HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* 12.7

VOLATILITY(MG/METER CUBED)* .75+04 VOLATILITY(MILLIMOLE/ METER CUBED)* .41+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DENSITY(G/ML) = 1.1311 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1731 - .00105 +TEMP.(C.) DETERWINED OVER THE TEMPERATURE HANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 DETERMINED OVER

DENSITY(G/ML) = 1.1311 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1731 - TRE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77.

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.54720, Br -4.19.67, C = 212.3

TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

VISCOSITY(CENTISTOKES) = 1.568

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 96.C REFERENCE: ARCSL-TR-7700

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD UF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE

GA/CC DEG C CC/MOLE AIM.

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

1.568

REFERENCE: ARCSL-TR-77001

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE AIM. . 3694 412.79 493.30 29.80 * 7

CM.SQ./SEC CALCULATED FC & VAPOR IN AIR .057 DIFFECTION COEF.

ABOVE MRITICAL PROPERTIES AND THE VISCUSITY OF VAPOR = 6.76-03 CENTIPOISE THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING THE MCDIFIED SUTHERLANDS EQ., J. PHY.CHEM.48,23(1944)

ن 40) DEGREES ¥ 2361 END OF COMPOUND EA

PAGE NUMBER R-270

Appendix B

SUMMARY O. PROPERTIES OF EA 3307 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 219.2 GENERAL REFERENCE: ADVOL-TO-7700 SUMMARY OF PROPERTIES OF EA 3307 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 2:9.2

COMMON NAME: FORMULA WEIGHT: 2:9.2

GENERAL REFERENCE: ARCSL-TR-77001

BE VALID UNLESS LIQUID SUPERCULAS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 9.70550, B* 3114.70, C* 251.8 DETERMINED DVER THE TEMPERATURE RANGE 10.0 TO 55.0 JEG. CENT, REFERENCE ARCSL-TR-77001

VAPOR PRESSURE(TORR)*

VAPOR PRESSURE(TORR)*

****** WARNING: THE ABOVE VALUEC ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE *****

****** WARNING: THE ABOVE VALUEC ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE *****

PAGE NUMBER 8-271

-40.0 DEGREES C.

¥

3307

END OF COMPOUND EA

Appendix B

UNCLASSIFIED

PAGE NUMBER 8-272

-20.0 DEGREES C. ¥1 3307 END OF COMPINUND EA

***** JARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A* 9.70650, B* 3114.70, C* 251.8 DETERMINED OVER THE WERE ISED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESCUE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR) = .19-03
ESTIMATED BOILING POINT(CENT.) = 204.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 17.0
VOLATILITY(MG/METER CUBED) = .28+01 VOLATILITY(MILLIMOLE/ METER CUBED) = .12-01
*+*** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

3307 AT -20.0 DEGREES CENTICAADE FORMULA WEIGHT: 219.2

Appendix B

UNCLASSIFIED

.0 DEGREES CENTIGRADE

大学の

The state of the state of

***** MARNING: SINCE THERE IS NO MELTING PULNT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS EAST A 491): A # 9.70850, B # 3114.70, C # 251.8 DETERMINED OVER THE TEMPERATURE *****

TEMPERATURE RANGE 10.0 TO 55.0 DEG. CENT. REFERÊNCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .22-02
ESTIMATED BOILING POINT(CENT.)= 204.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.7
VOLATIL:TY(MG/METER (JBED)= .28+02 VOLATILITY(MILLIMOLE/ METER CUBED)= .13+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

.0 DEGREES C. 4 3307

END OF COMPOUND EA

PAGE NUMBER 8-273

Appendix B

UNCLASSIFIED

**** MARNING: SINCE THERE IS NO MAME:

FORMULA WEIGHT: 219.2

GE VALID UNLESS LIQUID SUPERCOOLS TO LEGIFIED CALCULATION OF VALUES BELOW DATA RANGE MAY NOT TEMPERATURE RANGE 19.0 TO 55.0 DEG. CENT. A* 9.70550, B= 3114.70, C* 251.8 DETERMINED OVER THE ESTINATION OF VALUES BELOW DATA RANGE MAY NOT WERE USED TO CALCULATE THE FOLLOWING FOUR REFERENCE: ARCSL-TA-77001

ESTINATED BETSURE THE FOLLOWING FOUR PROPERTIES: VOLATĪLITY(MILLIMOLE/ METER CUBED)# VADOR PRESSURE(TORR) = (8-0) ESTIMATED BGILING PSINT(CENT.) = 204.5 HEAT OF VAPORIZATION(KILGCALORIES/MOLE) = -ATILITY(MG/METER CUBED) = .21+03

PAGE NUMBER 8-274

20.0 DESAEES C.

¥

3307

END OF COMPOUND EA

Appendix B

UNCLASSIFIED

302

25.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

END OF COMPOUND EA 3307 AT 25.0 DEGREES C.

PAGE NUMBER 8-275

Appendix B

UNCLASSIFIED

COMMINS SINCE THERE IS NO MELTING POINT FOR THIS COMPCUND. CALCULATION OF VALUES BELOW DATA KANGE MAY NOT TEMPERATURE SUMMESS LIQUID SUFFERENCE: ARCSL-TR-77061

32 VALED UMLESS LIQUID SUFFERENCE: TO SPECIFIED TEMPERATURE "****

TEMPERATURE RANGE 10.0 TO 55.0 PEC. CENT. REFERENCE: ARCSL-TR-77001

WARE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: ARCSL-TR-77001

ESTIMATE THE FOLLOWING FOUR PROPERTIES:

FIND OF COMPOUND EA 3307 AT 40.0 DECREES C.

PAGE MUMBER 8-270

. 55+01

VOLATILITY(MILLIMOLE/ METER CUBED)=

ESTRATED BOILING POINT (CENT.)* 204.5 HEAT OF VAPOXIZATION(KILGCALORIEG/MOLE)* VOLATILITY(NG/METER CURED)* .12+04

UNCLASSIFIED

GENERAL REFERENCE: ARCSL-TR-7700. ***** WARNING THE REQUESTED TEMPORANCE FORMULA WEIGHT: 180.2 GENTIGRADE VALID ONLY FOR SUPECCOLED LIQUID AND NOT THE SCLID *****

THE STATE OF STATE OF

the state of the state of

.00108 *TEMP.(C.) DETERMINED DVER 1.1671 -DEMSITY(G/ML) = 1.2091 WAS CALCULATED FROM THE EQUATION: DEMSINY THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: A

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE **** REFERENCE: ARCSL-TR-77001

DETERMINED CVER THE THE FULLOWING ANTOINE CONSTANTS(EATR 4491): As -2.19770, Bu -781.80, Cs 273.2 Temperature range 25.0 to 45.0 deg. cent. Referenciiancs(-Tr-77001 Were used to calculate the viscosity Viscosity(Centistones) a 14.306

***** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED (NIT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: ARCSL-TR-77001 -37.9 MELTING POINT (DEG. CENT.) .

ZHURM, FIZ KHIM, 37, 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD .F FILIPPOY. DENSITY TEMPERATURE YOLUME PRESSURE . GA/CC DEG C CC/MOIE ATM. . 3678 469.97 489.90 29.88 Z I

CM.SQ./SFC CALCULATED FOR VAPOR IN AIR 030 DIFFUSION COEF. .

ABONE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 4.80-03 CENTIPDISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ. J. PHY.CHEM. 49,23(1944)

PAGE NUMBER B-277

Ġ -40.0 DEGREES AT ENU OF COMPOUND EA 3430

Appendix B

-20.0 DEGREES CENTIGRADE GHT: 186.2 ARCSL-TR-77001 FORMULA WEIGHT: 3430 SUMMARY OF PROPERTIES OF EA COMMON NAME:

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

REFERENCE: ARCSL-TR-77001 DEMSITY(G/ML)= 1.1961 MAS CALCULATED FROM THE EQUATION: DENSITY= The Temperature range 25.0 to 45.0 deg. cent. Reference: Af

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED GVER THE 273.2 FOLLOWING ANTOINE CONSTANTS(EATR 4481): A= -2.19770, B= -781.80, C= Frature range 25.0 to 45.0 deg. cent. Reference:Arcs(-tr-7700) TEMPERATURE RANGE 25.0 TO 45.0 DE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKES)* 7.1

7.773

***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED GUT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: APCSL-TR-77001 -37.8 #CLTING POINT (DEG. CENT.) =

ZHUPN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TRAPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE ATM. 3878 409.97 489.90 29.88 Ĭ

CH.SQ./SEC CALCULATED FOR YAPOR IN AIR 950. DIFFUSION COEF.

TME VISCOSI (Y OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUIMERLANDS EQ., U.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.29-03 CENTIPOISE

PAGE NUMBER 8-278

"20.0 DEGREES C.

۸Ţ

3430

END OF COMPOUND EA

FAED

ZHURN, FIZ KHIM. 37. 201(1963)

GENERAL REFERENCE: ARCSL-TR-//1001 .80.2 FORMULA WEIGHT:

.0 DEGREES CENTIGRADE AT 3430 SURMARY OF PROPERTIES OF EA **** MARNING: SINCE THERE 15 NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

NEFRAENCE: ARCSL-TR-77001 1.1671 WAS CALCULATED FROM THE EQUATION: DENSITY" 1.1971 FANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-DENSITY (G/ML) = 1.1671 THE TEMPERATURE RANGE

* *** WARNING: THE ABOVE MALUES ARE EXTRAPOLATED GUT OF THM DATA TEMPERATURE RANGE *****

DETERMINED OVER THE THE FOLLDWING ANTOINE CONSTANTS(EATR 4491): As "2.19770, 3" -781.80, C* 273.2 TCMPERATURE RANGE 25.0 TO 45.0 DEG CENT. REFERENCE!ARCS[STR-7760] WERE USED TO CALCULATE THE VISCOSITY 4.618 VISCOSITY (CENTISTOKES)=

ANTER MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE HANGE *****

REFERENCE: ARCSL-TH-77001 -37.8 MELTING POINT (DEG. CENT.) .

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF TELPPON PREFSURE DENSITY TEMPERATURE VOLUME 04/CC DEG C CC/MCLE 64/CC SIFISD

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .042 GIFFUSION COEF. .

ABLUE CATTICAL PROPERTIES AND THE "VISCOSITY OF VAPOR " 5.79-03 CENTIPOISE THE PISCOSITY OF THE VAPOR WAS ESTIMATED USING (HE MODIFIED SUTHERLANDS &Q., J.EHY.CHEM.48.23(1944)

.O DEGREES C. ۲ END OF COMPOSNID EA 3430

PAGE HUMBER 8-279

1 3439 AT 20.0 DEGREES CENTIGRADE Formula Height: 180.2 Genepal Reference: Arcsl-Ta-77001 SUCHARY OF PROPERTIES OF EA

00105 *TEMP. (C.) DETERMINED OVER DEMBITY(O/MEL)* 1.1481 WAS CALCULATES FROM THE EQUATION: DENSITY* 1.1671 - OC THE TREPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNENG! THE ABOY! VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 18(EATR 4491): A= -2.19770, B= -781.80, C= 273.2 45.4 DEG. CENT. REFERENCE:ARCSL-TR-77001 THE FOLLOWING ANTOING CONSTANTS (EATH 4491): A= TEMP, 44TUME RANCE 28.0 TO 45.0 DEG. CEST. N TO CALCULATE THE VISCOBITY WINDSTIM CENTISTOKES).

***** MAMBING: THE ABOVE VALUES AND EXTRAPOLATED DUIT OF THE DATA TEMPERATURE RANGE *****

REFERENCE: ARCSL-TR-77001 -37.8 NEL ING POINT (DEG. CENT.) .

ZHURN. FIZ KHIM. 37, 201(1963) FOLLDEING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILLPPON. Density temperature volume pressure

CC/MOLE **59.59** 3678

.049 CM.SO./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF. -

ME CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 6.28-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOME CRITICAL CONTINUE SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF COMPOUND EA 2430 AT 20.

PAGE HUMBER 8-280

20.0 DEGREES C.

A

END OF COMPOUND EA 3439

GENERAL REFERENCE: ARCSL-18-7730 25.0 DEGREES CENTIONADE FORMULE WEIGHT: ¥ 3430 SUMPLARY OF PROPERTIES OF EA COMMON KAME:

OFFER MARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTURATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND BUT MEANINGFUL

.00108 -TEMP. (C.) DETERBINCO OVER REFERENCE: ARCSL-TR-77001 DENSITYIG/ML)* 1.1408 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.1871 --The temperature nance 25.0 10 45.0 Deg. Cent. Reference: Arcsl-tr-770

DETERMINED OVER THE 273.2 THE FOLLOWING ANTOINE CONSTAMIS(EATR 4491): A. -2.19770, B. -781.80, C. TEMPEHATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTONES)= 2.654

REFERENCE: ARCSL-TR-77001 -37.8 MELTING POINT (DEG. CENT.) .

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE PRESSURE GRACC DEG C CC/MDLE ATM.

489.90 409.97 3678

.051 CM.SQ./SEC CALCULATED FOR JAPOR IN AIR DIFFUSION COEF.

VISCOSITY OF VAPOR = 6.40-03 CENTIPOISE THE VISCUSITY OF E VAPOR WAS ESTIMATE USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF

25.0 DEGREES C. ۲ END OF COMPOUND EA 3430

PAGE NUMBER 8-281

Ŭ**N**CI FIED 309

GENERAL REFERENCE: ARC3L-TR-77001 40.0 DEGREES CENTIGRADE 180.2 FORWULL HEIGHT: 7 3430 Ę SUMMARY OF PROPERTIES OF COMMON NAME:

DATA TO ESTIMATE MARNING: SINCE THERE IS NO BOILLING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO EST A BGILING POINT, THE VALUES CALCULATED ABOVE. HE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ****

DENSITY(G/ML)= 1.1251 MAS CALCULATED FROM THE EQUATION: DENSITY= 1.1671 - .00105 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TA-77001

DETERMINED OVER THE 273.2 THE FOLLOWING ANYOINE CONSTANTS(EATR 4491): A= -2.19770, B= -781.80, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALLULATE THE VISCOSITY

1.990 VISCOSTIY(CENTISTOKES).

REFERENCE: ARCSL-TR-77001 -37.8 MELTING POINT (DEG. CENT.) .

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. DENSITY TEMPERATURE VOLUME PRESSURE 光

ZHURN: FIZ KHIM. 37. 201 (1983)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 23.88 489.90 DIFFUSION COEF. #

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL ADPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.77-03 CENTIPOISE

PAGE NUMBER 8-287 40.0 DEGREES C. ۲ 34.76 END UF COMPOUND EA

Appendix 3

SSIFIED

310

-40.0 DEGREES CENTIGRADE FORMULA MEIGHT: 208.2 SUNTARY OF PROPERTIES OF EA

***** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTING GAIR GANGE MAY NOT THE FOLLOWING ANTINE CHARL SHORE FOLLOWING ANTINE CHARL SHORE THE FOLLOWING ANTINE CHARL SHORE IS OF THE FOLLOWING ANTINE CHARL SHORE IS OF THE FOLLOWING ANTINE CHARL SHORE IS OF THE FOLLOWING SHORE IS OF THE FORM SHORE SHORE IS OF THE FORM SHORE SHO

REFERENCE: ARCSL-TR-7700;

TEMPERATURE BANCE 15.0 TO 50.0 DEG. CENT. MEPEN WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VIPOR PRESSURG(TORRIX

HEAT OF WAPORIZATIONAKILOCALORIES/MOLE)= ESTIMATED BOILING POINT (CENT.) = 354.8 VOLATILITY! MC/METER CUBFD)=

.00000 -TEMP.(C.) DETFRMINED DVER VOLATILITY!MO/METER CUBFD)* .41-01 YOLATILITY(MILLIMOLE/ METER CUBES)* .26-03 1.1:45 WAS CALCULATED FRUM THE EQUATION: CENSITY# 1.1285 -DENSITY (G/RL) =

REFERENCE: ARCSI-TH-77001 AS.O DEG. CENT. 25.0 10 THE TEMPERATURE RANGE

301.18 ***** WARKING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA EMPERATURE

SET RAMINED OVER THE 145.2 42 CONSTANTS(EATR 4491): A# -1.33200; B# -360.96; C# 25.0 TO 45.0 DES. CENT. REFERENCE.ARCSL-TR-77061 FULLDWING ANTOING TEMPERATURE RANGE

WERE USED TO CALCULATE THE VISCOSITY VISCRSITY(CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE MARNING . THE ABOVE VALUES ARE EXTRAPOLATED GUT

ZHURN, FIZ KHIM, 57, 20 (1983 FILIPPOY FILLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF PRESSURE DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 3477 480.21 598.78 Ĭ,

26.98

CM. SQ /SEC CALCULATED FOR VAPUR IN AIR 0.0 DIFFUSION COEF.

VISCOSITY OF VAPOR + 4,21-03 CENTIFUISE PROPERTIES AND THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) VISCOSITY OF THE

-4C.U DEGREES C. ¥ END OF COMPOUND EA 4349

PAGE NUMBER 8-283

-20.0 DEGREES CENTIGRADE 4349 SUMMARY OF PROPERTIES CY EA HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= VOLATILITY(MG/METER CUDED)= .91+00 354.8 ESTIMATED BOILING POINT (CENT.)= VAPOR PRESSURE(TORR)=

.00090 .TEMP.(C.) DETERMINED OVER REFERENCE: ARCSL-TR-7700 1.1285 DENSITY(G/ML) = 1.1465 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CEAT. REFERENCE: / DENSITY (G/ML) =

VOLATILITY(MG/METER CUBED)# .91+00 VOLATILITY(MILLIMOLE/ METER CUBED)# .44-C2 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE BANGE *****

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

RANGE ****

DETERMINED OVER THE 145.2 å FOLLOWING ANTOINE CONSTANTS(EATR 4491): A** -1.33200, B= -360.96, (ERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 THE TEMPERATURE RANGE 25.0 TO 41

THE FOLLOWING ANTOINE CONSTANTS(EATR 44)

TEMPERATURE RANGE 25.0 TO 45.0 DEG.

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 35.586

35.586

***** WARNING: THE AROVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FULLOWING CRITICAL PROPERTIES MERE ESTIMATED USING THE METHOD OF FILIPPOV PRESSURE CC/MOLE VOLUME DENSITY TEMPERATURE G'1/CC

ZHURN, FIZ KHIM, 37, 201(1983)

26.96 3477 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .031 DIFFUSION COEF. .

CENTIPOISE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE IFIED SUTHERLANDS EQ., J.PHY.CHEM,40,23(1944) VISCOSITY OF VAPOR * 4.65-03 MODIFIED SUTHERLANDS

ပဲ -20.0 DEGREES 7 4348 COMPOUND EA END OF

PAGE NUMBER B-384

Appendix B

FIED

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT LUCATING CONSTANTS (EATR 4491): A* 6.03900 B* 1711 7 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

HEAT OF VAPORIZATIONINILOCALORIES/MOLE) = 16.5 VOLATILITY(MG/METER CUSED) = .16+02 VOLATIIITY(MILLMOLE/ METER CUED) = .49+01 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERA "RE RANGE **** ESTAMATED BOILFING POINT(CENT.) = 354.8
HEAT OF VAPORIZATION(KILOCALORIES/MCLE) = VOLATILITY(MG/METER CUSED) = 10+02

1.1285 WAS CALCULATED FROM THE EQUATION: DENSITY* .128500090 *TEMP.(C.) DETERMINED DVER ANGE 25.0 fo 45 0 DEG. CENT. REFERENCE: ARGIN-TA-7001 DENSITY(G/NL)= THE TEMPERATURE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEFFERATUR. RANGE

DETERMINED OVER THE IS(EATR 4491): A* -1.33200, 8= -380.96, (P 145.2 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 FULLOWING ANTOINE CONSTANTS (EATH 4491): A. WERE USED TO CALCULATE THE VISCOSITY TEMPERATURE RANGE UNCLASSIFIED

VISCOSITY(CENTISTOKES).

OF THE DATA TENPERATURE PINGE WARNING: THE ABOVE VALUES ARE EXTRAPOLATED CUT

ZHURN. F12 KHIM. 37. 201(1983) FILIBRION. P FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE PETTING 人のこの数形 DENSITY TEMPERATURE H.

598.78

CM.SQ./SEC GALCULATED FOR VAPOR IN AIR .037 CIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.09-03 CENTIPOTSE

ပ ~ COMPOUND EA EXD OF

PAGE MUMBER

Appendix B

ZHURN. FIZ KHIM. 37. 201(1963)

.00090 *TEMP.(C.) DETERMINED DVER NING SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNIESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** GENERAL REFERENCE! ARCSL-TR-77001 188.1 DETERMINED OVER THE 20.0 DEGREES CENTIGRADE REFERENCE: ARCSL-TR-77001 ETER CUBED) = .72+C2 VOLATILITY(MILLIMOLE/ METER CUBED) = 1.1195 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1285 -1714.70, C* THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 0.03500, B= 1714.70, C= 15MPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: FORMULA WEIGHT: 45.0 DEG. CENT. ¥ SUMMARY OF PROPERTIES OF HEAT OF VAPORIZATION (KILDCALORIES/MOLE)= COMMON NAME: VAPOR PRESSURE(TORR)= .63-62 ESTIMATED BOILING POINT(GENT.)= 25.0 10 VOLATILITY (MG/METER CUBED)= THE TEMPERATURE HANGE DENSITY(G/ML)=

DETERMINED OVER THE ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED BUT OF THE DATA TEMPERATURE RANGE ***** 145.2 ů 15(EATR 4491): A= -1.33200, B= -350 96, (45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): Am 25.0 TO TEMPERATURE RANGE

7.130 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

FALLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperajure volume pressure CC/MD:E (5.3)/CC (5.477 SSIFIED

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .043 DIFFUSION COEF. .

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.54-03 CENTIPOISE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCUSITY OF THE H.

20.0 DEGREES ۲ 4349 END OF COMPOUND EA

PAGE NUMBER 6-286

Appendix B

25.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

TOTAL STATE OF THE STATE OF THE

· 人名英格兰

** * WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FULLOWING ANTOINE CONSTANTS (EATH 4491): As 6.03900, Bs 1714.70, Cs 138.1 DETERMINED OVER THE TEMPERATURE ****

TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

VAROR PRESSURE(TORR): . . 99-62

VOLATILITY(W3/WZTER CUBED)= .11+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .53+00
DENSITY(G/ML)= 1.1060 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1285 - .00090 *TEMP.(C.) DETERMINED GVER
THE TEMPERATURE RANGE 25.0 IO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 11403 VOLATILITY(MILLIMOLE/ METER CUBED)=
11403 VOLATILITY(MILLIMOLE/ METER CUBED)=
11403 VOLATILITY(MILLIMOLE/ METER CUBED)=
11403 VOLATILITY(MILLIMOLE/ METER CUBED)=
11403 VOLATILITY
1140 FOLICWING ANTOINE CONSTANTS(EATR 4491): A= -1.33200, B= -360.96; C= 145.2 DETA
1141 FOLICWING CALCULATE THE VISCASITY
1140 VISCOSITY(CENTISTOKES)= 6.151
1141 FOLICWING CRITICAL PROPERTY
1141 FOLICWING CRITICAL PROPERTY
1151 DENSITY TEMPERATURE
1152 DETAILS
1153 DENSITY TEMPERATURE
1154 DENSITY TEMPERATURE
1155 DENSITY TEMPERATURE
1156 DENSITY TEMPERATURE
1157 DENSITY TEMPERATURE
1157 DENSITY TEMPERATURE
1158 DENSITY TEMPERATURE
1159 DENSITY TEMPERATURE
1150 DENSITY TEMPERATURE

DETERMINED OVER THE

ZHURN. F12 KHIM. 37. 201(1983)

CM.SQ./SEC CALTTED FOR VAPOR IN AIR .044 CIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.49,23(1944) VISCOSITY OF VAPOR = 5.65-03 CENTIPDISE

ပ 25.0 DEGREES Y 1349 END OF COMPOUND EA

PAGE NUMBER 8-287

Appendix B

ZHURN. FIZ KHIM. 57. 201(1963)

ESTEMATED BOILING POINT(CENT.)= 354.15
HEAT OF VAPOPIZATION(KILGCALORIES/MULE)= 14.8
HEAT OF VAPOPIZATION(KILGCALORIES/MULE)= 14.8
VOLATILITY(MG/METER CUBED)= .354.03 VOLATILITY(MILLIMOLE/ METER CUBED)= .17+01
DEMBITY(G/ML)= 1.0925 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1285 - .00090 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 COMMON WAKE:

COMMON WAKE:

FORMULA WEIGHT: 208.2

GENERAL REFERENCE: ARCSL-TR-77001

GENERAL REFERENCE: ARCSL-TR-77001 10.0 DEGREES CENTIGRADE E RANGE 15.0 TO 50.0 UEG. CENT. REFERENCE: ARCSL-TR-77001 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): V. TOR PRESSURE(TONE) .

DETERMINED OVER THE 145.2 THE FOLLOWING ANTOINE CONSTANTS(EATH 4491): A= -1.33200, B= -366.96, C= (TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCEIARCSL-TR-77001 MERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES)=

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DEMSITY TEMPERATURE VOLUME PRESSURE ATE. : VOLUME CC/MOLE 598.78 480.21 GE/CC F

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION COEF.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

PAGE NUMBER 0-288

ပ

40.0 DEGREES

A

4349

END OF COMFOUND EA

12/70

经 化 化 化

GENERAL REFERENCE: MRC-DA-263 -40.0 DEGREES CENTIGRADE BHT: 122.1 GEN FORMULA WEIGHT: Z 4923 ¥ OF PROPERTIES OF COMMON NAME: SUMMARY

CHO

THE FULLOWING ANTOINE CONSTANTS(EATR 4491); Am 7.30642, B= 1710.85, C= 212.8 DETERMINED OVER THE TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRD-DA-2634NBB343 P50 COM3.EQU WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORP)= .25-02

ESTIMATED BOILING POINT (CENT.) # 173.8
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) #
VOLATILITY (MG/METER CUBED) # .21+02

RANGE **** 17+00 HEAT OF VAPORIZATION(KILGCALORIES/MOLE) = 14.2 VOLATILITV(MG/METER CUBED) = .21+02 VOLATILITY(MILLIMOLE/ METER CUBED) = **** WARN'NG: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

OVER .00088 *TEMP.(C.) DETERMINED REFERENCE: MRC-DA-263 .9937 1.0289 WAS CALCULATED FROM THE EQUATION: DENSITY... RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: N THE TEMPERATURE RANGE DENSITY (G/ML) =

RANGE OF THE DATA TEMPERATURE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER 112.8 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* -.90640, B= -148.99, C* TEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70 WERE USED TO CALCULATE THE VISCOSITY

13,775 VISCOSITY (CENTISTOKES)=

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

.1146*TEMP.(Ç.) FENT. REFERENCE: MRC-0A-263 EQUATION: SURFACE TENSION(DYNES/CM)= 35.7171 - 1146*TEMP.(Ç.)
DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC
WERE USED TO CALCULATE THE SURFACE TENSION 41.3 DYNES/CM
***** WARNING: THE AROVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 포

MELTING POINT (DEG. CENT.) = -103.0 REFERENCE: WRC-DA-263 12/70 APPROXIMATE REFRACTIVE INDEX(ND)= 1.5626 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND)= 1.5434 - .00048*TEMPERATURE(C.) DETERMINED OVER 25.0 TO 60.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
FLASH POINT, OPEN CUP(CENTIGRADE)= 56.0 REFERENCE: MRC-DA-263 12/70
MILTING POINT DEPRESSION(DEG. C./MOLE)= -103.000 REFERENCE: MRC-DA-263 DEC 70 AP

RANGE

THE TEMPERATURE

APROX

ZHURN. FIZ KHIM. 37. 201(1963 FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE エピ

ATM. CC/MOLE 416,69 GII/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .036 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 4.55-03 VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM,48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

ပ -40.0 DEGREES ÁT 4923 COMPOUND EA

ö END

NUMBER 6-289

PAGE

Appendix B

317

assified

GENERAL REFERENCE: MRC-DA-263 DEC -20.0 DEGREES CENTIGRADE SHT: 122.1 GEN FORMULA WEIGHT: A 4923 SUMMARY OF PROPERTIES OF EA COMMON NAME:

20

DETERMINED OVER THE 7.30642, B= 1710.85, C= 212.8 DETERMI REFERENCE: MRC-DA-263&NBB343 P50 COMB.EQU 7.30642, THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= TEMPETATURE RANGE 45.0 TO 174.0 DEG. CENT.

TEMPSTATURE RANGE 45.0 TO 174.0 DEG. CENT. REFER VAPOR PRESSURE(TORR)≥

ESTIMATED BOILING POINT(CENT.)= 173.8 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)=

13.5 VOLATILITY(MILLIMOLE/ METER CUBED)=

REFERENCE: MRC-DA-263 12/70 DENSITY(G/ML) * 1.0113 WAS CALCULATED FROM THE EQUATION: DENSITY* THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: 1

**** WARNINC: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 112.8 FEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE:MRC-DA-263 12/70 VISCOSIFY/CENTFETCHE 4.994 VISCOSI (Y (CENTISTOKES)=

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

12/70 .1146*TEMP.(C.) *** DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC WFRE USED TO CALCULATE THE SURFACE TENSION 39.0 DYNES/CM ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE 36.7171 -EQUATION: SURFACE TENSION(DYNES/CM)=

REFERENCE: MRC-DA-263 12/70 APPROXIMATE

DETERMINED OVER THE TEMPERATURE RANGE

REFERENCE: MRC-DA-263 DEC 70 APROX

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE POTIMATED USING THE METHOD OF FILIPPOY. PRESS, CE DERSITY TEMPERATURE VOLUME 出出

ATA 37.91 CC/MOLE 91,08 DE3 C 33/ES

CM.SQ. / NET CALCULATED FOR VAPOR IN AIR .043 DIFFUSION COEF.

VISCUSITY OF VAPOR # 5.02-03 CENTIPDISE ABOVE CRITICAL PROPERTIES AND THE VAPOR WAS ESTIMATED USING THE THE VISCOSIFY OF THE VAPOR WAS ESTIMATED USING T MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

ပဲ -20.0 DEGREES Ξ 4923 END OF COMPOUND EA

PAGE NUMBER 8-290

HT. assified

70 GENERAL REFERENCE: MRC-DA-263 DEC OVER THE DETERMINED COMB. EQU .O DEGREES CENTIGRADE TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRC-DA-2638NBB343 P50 WERE USED TO CAUCULATE THE FOLLOWING FOUR PROPERTIES: 122.1 FORMULA WEIGHT: 4 4923 ¥ ile. SURTIARY OF PROPERTIES COMMON NAME:

VAPOR PRESSURE(TOKR) #

VOLATILITY(MG/METER CUBED)* .13+04 VOLATILITY(MILLIMOLE/ METER CUBED)* .11+02 ***** WARMING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** 12.9 HEAT OF VAPORIZATION(KILGCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = 13+04

.00088 +TEMP.(C.) DETERMINED OVER 12/70 N: DENSITY* .9937 -- REFERENCE: MRC-DA-263 .9937 WAS CALCULATED FROM THE EQUATION: DENSITY* ANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: W THE TEMPERATURE RANGE DENSITY (G/ML) =

**** RANGE OF THE DATA TEMPERATURE * * * * * WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

DETERMINED OVER THE 112.8 ä WE TEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70 WERE USED TO CALCULATE THE VISCOSITY -148.99, ä -.90640, FULLOWING ANTOINE CONSTANTS(EATR 4491): A=

VISCOSIIY(CENTISTOKES)=

THE DATA TEMPERATURE RANGE 9 **** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT

REFERENCE: MRC-DA-263 13/70 DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC MERE USED TO CALCULATE THE SURFACE TENSION 36.7 DYNES/CM .1146*TEMP.(C.) 36.7171 SURFACE TENSION DYNES/CM)= EQUATION: HE

REFERENCE: MRC-DA-263 12/70 APPROXIMATE MELTING POINT (DEG. CENT.) * -103.0 REFERENCE: MRC-DA-263 1 REFRACTIVE INDEX(ND)= 1.5434 WAS CALCULATED FROM THE EQUATION:

TEMPERATURE

FLASH POINT,

MELTING POINT DEPRESSION (DEG. C./MOLE) =

ZHURN. FIZ KHIM. 37. 201(1963) PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV VOLUME PRESSURE CC/MOLE DENSITY TEMPERATURE FULLOWING CRITICAL GW/CC 벁

418.69 DIFFUSION COEF.

3122

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .051

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 5.49-03 CENTIPOISE VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM, 48,23(1944) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

ပဲ .O DEGREES AT 4923 OF COMPOUND EA

PAGE NUMBER B-291

Appendix B

SSIFIED

GENERAL REFERENCE: MAC-DA-263 4923 AT 20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 122.1 2 SUBGARY OF PROPERTIES OF

20

DEC

DETERMINED OVER 7.30642, 8= 1710.65, C= 212.8 REFERENCE: MRC-DA-2634N98343 P50 CONSTANTS(EATR 4491):

.00088 +TEMP.(C.) DETERMINED OVER N: DENSITY* .9937 - .0008 REFERENCE: MAC-DA-263 12/70 .9761 MAS CALCULATED FROM THE EQUATION: DENSITY# ANGE 30.0 TO 85.0 DEG. CENT. REFERENCE: R THE TEMPERATURE RANGE

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DETERMINED OVER THE 112.8 FULLOWING ANTOINE CONSTANTS (EATR 449!): A. -. 90640, B. -148.99, C. FRATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

1.641 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)=

AEFERENCE: MRC-DA-263 12/70 **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE CATA TEMPERATURE RANGE .1146+TEMP.(C.) 65.0 DEG. CENT. A 34.4 DYNES/CM 30.0 10 WERE USED TO CALCULATE THE SURFACE TENSION EQUATION: SURFACE TENSION(DYNES/CM)= 王

REFERENCE: MRC-DA-263 :2/70 APPROXIMATE

DETERMINED OVER THE TEMPERATURE .00048*TEMPERATURE(C.)

REFERENCE: MRC-DA-263 DEC 70 APROX REFERENCE: MRC-DA-263 12/70 25.0 TO 60.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70 OPEN CUP(CENTIGRADE) = 56.0 REFERENCE: MRC-DA-263 12 -103.000 MELTING POINT DEPRESSION(DEG. C./MOLE)= FLASH POINT.

ZHURN. FIZ KHIM. 31. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. Density temperature volume pressure 뿔

CC/MOLE 418.69 GM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .059 DIFFUSION COEF.

CENT 1 POISE WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR = 5.96-03 ABRYE CRITICAL VAPOR WAS ESTIMATED USING THE EQ., J.PHY.CHEM, 48,23(1941) THE VISCOSITY OF THE MODIFIED SUTHERLANDS

ပ 20.0 DEGREES A 4023 END OF COMPOUND EA

PAGE NUMBER B-292

Appendix

LINCL 320

GENERAL WEFERENCE: MRC-DA-263 CEC 2-3.0 DEGREES CENTIGRADE FORMULA WEIGHT: 7 4923 OF PROPERTIES UF COMMON NAME: SUMMARY

ALTERNATION OF STREET

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 7.30642, B* 1710.85, C* 212.8 DETERMI Temperature range 45.0 to 174.0 deg. cent. Reference: Mic-da-263&nb8343 pso comb.equ Were used to calculate the following four properties:

VCLATILITY(MG/METER CUBED) . 65+04 VOLATILITY(MILLIMOLE/ METER CUBED) . ***** WARWING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE 12.3 VAPOR PRESSURE(10RR)= .13+01 ESTIMATED BULLING POINT(CENT.)= 173.8 HEAT OF VAPORIZATION(KILDCALORIES/MOLE)= VCLATILITY(MG/METER CUBED)*

REFERENCE: MRC-DA-263 12/70 .9717 WAS CALCULATED FROM THE EQUATION: DENSITY= THE TEMPERATURE RANGE DENSITY (G/ML) =

RANGE ****

OF THE DATA TEMPERATURE RANGE **** **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

DETERMINED OVER THE 112.8

REFERENCE: MRC-DA-263 12/70 EQUATION: SURFACE TENSION(JYNES/CM)= 36.7171 - .1146*TZMP.(C.)
DETERMINED OVER THE TEMPETATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC
WERE USED TO CALCULATE THE SURFACE TENSION 33.9 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE TEMPERATURE RANGE MELTING POINT (DEG. CENT.) * -103.0 REFERENCE: MRC-DA-263 12/70 APPROXIMATE REFRACTIVE INDEX(ND)* 1.5314 WAS CALCULATED FROM THE EQUATION: REFRACTIVE INDEX(ND)* 1.5434 - .00048*TEMPERATURE(C.) DETERMINED (THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -.90640, B. -148.99, C. 112

TEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE:MRC-DA-263 12/70

TEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE:MRC-DA-263 12/70

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 1.495

THE EQUATION: SURFACE TENSION 33.9 DYNES/CM

WERE USED TO CALCULATE THE SURFACE TENSION 33.9 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED JUT OF THE DATA TEMPERATURE USED TO CALCULATE THE SURFACE TENSION THE EQUATION:

REFRACTIVE INDEX(ND) = 1.5314 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND) = 1.5434 - .00048*TEMPERATURE(C.) DETER

PLASH POINT, OPEN CUP(CENTIGNADE) = 56.0

FLASH POINT, OPEN CUP(CENTIGNADE) = 56.0

REFERENCE: MRC-DA-263 12/70

FLASH POINT, OPEN CUP(CENTIGNADE) = 56.0

FLASH POINT, OPEN CUP(CENTIGRADE) = 56. MELTING POINT DEPRESSION(DEG. C./MOLE) =

ZHURN. FIZ KHIM. 37, 201(19:33) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE ATM. CC/MOLE DENSITY TEMPERATURE VOLUME GM/CC 3H1

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .062 DIFFUSION COEF.

391.08

418.69

AGOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 6.08-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

25.0 DEGREES C. AT 4923 END OF COMPOUND EA

PAGE NUMBER 8-293

Appendix

GENERAL REFERENCE! MRC-DA-263 DEC 40.0 DEGREES CENTIGRADE FORMULA WEIGHTS 49.23 SUMMARY OF PROPERTIES OF EA COMMON NAME:

2

DETERMINED OVER THE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.30642, B= 1710.85, C= 212.8 DETERMINTENTUPE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRC-DA-263&NB8343 P50 CUMB.EQU. WERE 1/260 TU CALCULATE THE FOLLOWING FOUR PROPERTIES:

35+0 VAPOR PRESSURE (TORR) =

ETIMATED BOILING POINT(CENT.) # 173.8
HEAT OF VAPORIZATION(KILDCALORIES/MOLE) # 12.0
YOLATILITY(MG/METER CUBED) # .22+05 VOLATILITY(MILLIMOLE/ METER CUBED) # .18+03

.00088 *TEMP.(C.) DETERMINED DVER 12/70 REFERENCE: MRC-DA-263 .9585 WAS CALCULATED FROM THE EQUATION: DENSITY= ANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: N DENSITY(G/ML) = .958E THE TEMPERATURE RANGE

DETERMINED OVER THE 112,8 THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A* -.90640, B= -148.99, C* TEMPERATURE RANGE .5 TG 50.0 DEG. CENT. REFERENCE:MRC-DA-263 12/70 WERE USED TO CALCULATE THE VISCOSITY

1.171 VISCOSITY(CENTISTOKES)*

REFERENCE: MRC-DA-263 12/70 .1146 "TEMP.(C.) 65.0 DEG. CENT. 36.7171 EQUATION: SURFACE TENSION(DYNES/CM) . **H**

REFERENCE: MRC-DA-263 12/70 APPROXIMATE DETERMINED DVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENWERE USED 10 CALCULATE THE SURFACE TENSION 32.1 DYNES/CMMELTING POINT (DEG. CENT.) = -103.0 REFERENCE: MRC-DA-263 12 REFRACTIVE INDEX(ND) = 1.5242 WAS CALCULATED FROM THE EQUATION:

DETERMINED OVER THE TEMPERATURE RANGE 60.0 DEG. CENT. REFERENCE: MRC-DA-233 12/70 1GRADE) = 56.0 A REFERENCE: MRC-DA-263 12/70 .00048*TEMPERATURE(C.) -103.000 REFRAÇTIVE INDEX(ND) = 1.5434 -FLASH POINT, OPEN CUP(CENTIGRADE) = 56. MELTING POINT DEPRESSION(DEG. C./MOLE) = 25.0 10

REFERENCE: MRC-DA-253 DEC 70 APROX

37 XII. ZHURN. FIZ FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOY. DENSITY TEMPERATURE VOLUME PRESSURE HH

201 (1963

37.91 CC/MOLE 391.08 418.69 GM/CC

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR 690. DIFFUSION COEF.

CENTIPOISE THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 6.43-03

40.0 DEGREES Ā 4923 END OF CCMPOUND EA

PAGE NUMBER B-294

DETERMINED OVER THE

***** WARNING: SINCE THERE IS NO MELING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 10.75150, B* 3658.20, C* 273.2 DETERMINED OVER THE TEMPERATURE CALCULATE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCSL—TR—77001

WERE 'SED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)** .12-04

ESTIMATED BOILING POINT(CENT.)* 191.6

HEAT OF VAPORIZATION(KILOCALORIES/WOLE)** 16.7

VOLATILITY(MG/METER CUBED)** .17+00 VOLATILITY(MILLIMOLE/ METER CUBED)** .79-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** -40.0 DEGREES CENTIGRADE SUNMARY OF PROPERTIES OF EA

... CENSLITE 1.0350 - .00080 *TEMP.(C.) DETERMINED OVER REFERENCE: ARCSL-TR-77001 DENSITY(G/ML) = 1.0670 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0350 - THE TEMPERATURE RANGE 25.0 TO 45.0 REG. CENT. REFERENCE: ARCSL-TR-77 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A=

*** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

273.2 TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: AR-77001 VISCOSITY (CENTISTOKES)=

**** ***** WARNING: THE ABOVE VALUES ARE EXTRAPO: ATED OUT OF THE DATA TEMPERATURE RANGE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 23.97 VOLUME CC/MOLE 499.88 SSIFIED

ZHURN. FIZ KHIM. 37. 201 (1983)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .023 DIFFUSION COEF.

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 3.85-03 CEMTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHV.CHEM.48.23(1944)

-40.0 DEGREES ¥ 5265 END OF COMPOUND EA

PAGE NUMBER B-295

***** WARNING: SINCE THERE IS:NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 10.75150, B= 3658.20, C= 273.2 DETERMINED OVER THE VOLATILITY(MG/METER CUBED)= .28+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .13-01 -20.0 DEGREES CENTIGRADE 10.75150, 8= 3658.20, C= REFERENCE: ARCSL-TR-77001 FORMULA WEIGHT: 219.2 TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERINGER USED. TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)* .20-03
ESTIMATED BOILING POINT(CENT.)* 191.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* 16.7
VOLATILITY(MG/METER CUBED)* .28+01 VOLATILIT 5265 SUMMARY OF PROPERYIES OF EA

.00080 *TEMP.(C.) DETERMINED GVER DENSITY(G/ML) = 1.0510 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.6353 - .0 THE TEMPERATURE RANGE 25.6 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 273.2 ٿ TS(EATR 4491): A= -3.10540, B=-1153.22, (45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. THE FOLLOWING ANTOINE CONSTANTS (EATR TEMPERATURE RANGE 25.0 TO 45.0 DE WERE USED TO CALCULATE THE VISCOSITY

ERE USED ID CALCULAIR INR VISCOSITY VISCOSITY(CENTISTOKES)* 28.189

**** ***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE VOLUME CC/MOLE DENSITY TEMPERATURE CM/CC THE

ZHURN. FIZ KHIM. 37, 201(1963)

CC DEG C CC/MOLE ATM: 71 499.88 691.18 23.97 DIFFUSION COEF. - .028 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

CENT 1 PO1 SE WE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR & 4.26-03 THE VISCOSITY OF THE VAFOR WAS ESTIMATED USING THE ABOVE CRITICAL MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

END OF COMPOUND EA 5265 AT -20.0 DEGREES C.

PAGE NUMBER 8-296

Appendix I

UNCLASSIFIED

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 44%): A* 10.75150, B* 3658.20, C* 273.2 DETERMINED OVER THE WERE USED TO CALCULATE THE FOLLOWING RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.7 Volatility(MG/MEter Cubed) = .29+62 Volatility(Millimole/ Meter Cubed) = .13+00 ***** Warning: The Above Values are extrapolated out of the data temperature range **** . O DEGREES CENTIGRADE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFER Were used to calculate the following four properties: Vapor pressure(Torr)* .23-02 OF PROPERTIES OF EA ESTIMATED BOILING POINT (CENT.) = 191.6

00080 *TEMP.(C.) DETERMINED DVER DETERMINED OVER THE OF THE DATA TEMPERATURE RANGE ++++ SITY(G/ML) = 1.0350 WAS CALCULATED FROM THE SQUATION: DENSITY = 1.0350 - 00 TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 DENSITY (G/ML) = H

273.2 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* -3.10540, B=-1153.22, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: AKCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 13.078

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE

**** OF THE DATA TEMPERATURE RANGE

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATE" USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE CC/MOLE 691.18 .3171 THE

ZHURN. FIZ KHIM. 37. 201 (1863

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF.

CENTIPOISE ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR * 4.66-03 THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) 50.. J.PHY.CHEM, 48,23(1944)

.o DEGREES ΑŢ 5265 END UF COMPOUND EA

ن

NUMBER 8-297 PAGE

Appendix B

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING NITOINE CONSTANTS(EATR 4491): A* 10.75150, B* 3658.20, C* 273.2 DETERMINED OVER THE TEMPERATURE S 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 20.0 DEGREES CENTIGRADE 5265 1 20.0 TO 30.0 DEG. CENT. REFER COULATE THE FOLLOWING FOUR PROPERTIES: SUMMARY OF PROPERTIES OF EA ESTIMATED BOILING POINT(CENT.) # 191.6 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) # WERE USED 10 COLLAIR INE VAPOR PRESCURE(TORR) =

.00080 *TEMP.(C.) DETERMINED OVER ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** REFERENCE: ARCSL-TR-77001 VOLATILITY(MG/METER CUBED)= .22+03 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML) = 1.0190 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0350 - THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770

DETERMINED OVER THE 273.2 ငံ IS(EATR 4491): A= -3.10540, b=-1153.22, (FULLOWING ANTOINE CONSTANTS (EATR 4491): A. THE TEMPERATURE RANGE 25.0 TO 49.

THE TEMPERATURE RANGE 25.0 TO 49.

THE FULLOWING ANTOINE CONSTANTS(EATR 449.

TEMPERATURE RANGE 25.0 TO 45.0 DEG.

TEMPERATURE RANGE 25.0 TO 45.0 DEG.

TEMPERATURE RANGE 25.0 TO 45.0 DEG.

VISCOSITY(CENTISTOKES) = 6.737

***** WARNING: THE ABOVE VALUES ARE

THE FULLOWING CRITICAL PROPERTIES WERE IN DENSITY TEMPERATURE VOLUME PRESSU

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATES OUT OF THE DATA TEMPERATURE RANGE

OF FILIPPOV FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD DENSITY TEMPERATURE VOLUME PRESSURE ATM. 23.97 VOLUME CC/NOLE 691.18 499.08

ZHURN. FIZ KHIM. 37. 201 (1963)

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF.

CENTIPOISE THE VISCOSIIY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.07-03

20.0 DEGREES Ą 5202 END OF COMPOUND EA

PAGE NUMBER

Appendix B

25.0 DEGREES OF ~ 5265 SUMJARY OF PROPERTIES OF EA

***** WARMING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****

TEMPERATURE RANGE CONSTANTS(EATH 4491): A* 10.75150, B* 3658.20, C* 273.2 DETERMINED OVER THE WERE USED TO CALCULATE THE FOLLOWING FOLIOWING FOUND THE FOLLOWING FOUND THE FOLLOWING FOUND THE FOLLOWING FOUND THE FOUND

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

.00080 *TEMP.(C.) DETERMINED DUFR C VOLATILITY (MILLIMGLE) 16.7

VOLATILITY (MILLIMGLE) METER CUBED) 36+C3 VOLATILITY (MILLIMGLE) METER CUBED 36-C4 VOLATILITY (MILLIMGLE) METER CUBED 45.0 FG. CENT. REFERENCE: ARCSL-TR-770C A5.0 FG. CENT. REFERENCE: ARCSL-TR-770C VISCOSITY (CENTISTORES) = 5.788

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. GRACE DEG. CC/MOLE ATM.

3171 499.88 691.18 RETERSNCE: ARCSL-TR-77001 VARDE PRESSURE(IOPR)= .30-01 ENTEMATED BOLLING POINT(CENT.)= 191.6 HEAT OF VAPORIZATION(VILOCALORIES/MOLE) 16.7 VOLAFILITY(MG/METER CUBED)= .36+63 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.0150 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0350 — THE TEMPERATURE WANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-770

DETERMINED OVER THE 273.2

ZHURN. FIZ KHIM. 37, 201(1963)

DIFFUSION COEF.

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUIHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 5.17-03 CENTIPOISE

Ċ 25.0 DEGREES **/** END OF COMPOUNC EA 5255

NUMBER

PAGE

SUMFARY D. PROPERTIES OF EA 5265 AT 40.0 DEGREES CENTIGRADE
COMMAN NAME: FORMULA WEIGHT: 219.2 GENERAL REFERENCE: ARCSL-TR-77001
#**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND. CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4431): A* 10.75150, B* 3658.20, C* 273.2 CETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: SUNGARY OF PROPERTIES OF EA VAPOR PRESSURE(TORR)* .12+00
ESTIMATED BOILING POINT(CENT.)* 191.6
HEAT OF VAPORIZATION(KILOCALURIES/MOLE)*
VOLATILITY(MG/METER CUBED)* .13+04 v

VOLATILITY(MG/METER CUBED)= .13+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .60+01 16.7

REFERENCE: ARCSL-TR-77001

DETERMINED OVER THE COLATILITY(MG/METER CUBED) - .13+04 VOLATILITY(MILLIMOLE/ METER CUBED) = .10030 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0350 - ...

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -3.10540, B = -1153.22, C = 273.2

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -3.10540, B = -1153.22, C = 273.2

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 3.778

THE FOLLOWING CRITICAL PROPERTIES WERE SSTIMATED USING THE METHGO OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C CC/MOLE AIM.

499.88

ZHURN. FIZ KHIM. 37. 201(1963)

CM.SQ./SEC CALCULA 3 FOR VAPOR IN AIR .044 DIFFUSION COEF. .

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,28(1844) VISCUSITY OF VAPUR = 5.48-03 CEWTIPGISE

40.0 DEGREES C. ۲ 5265 END OF COMPOUND EA

PAGE NUMBER 8-300

ZHURN. F.Z KHIM. 37. 201 (1963)

NING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** -40.0 DEGREES CENTIGRADE 5365 SUNHARY OF PROPERTIES OF

PLANT STATE BUTCH

DETERMINED OVER THE 253.0 8.68720, B# 2778.90, C# REFERENCE: EC-TR-76358 146.0 DEG. CENT. THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): TEMPERATURE NAME

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR) = .44-04 ESTIMATED BOILING POINT(CENT.) = 225.6

ESTIMATED BOILING POINT(CENT.)= 225.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.2
VOLATILITY(MG/METER CUBED)= .60+00 VOLATILITY(MILLIMOLE/ METER CUBED)= .30-.02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.2147 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1755 - .00098 +TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: NB8484 SUPENDED SOLIDS LIQ

***** WARNING: THE AGOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FULLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE PRESSURE CC/MOLE

.3651 453.36 542.84 28.68
DIFFUSION COEF. - ,027 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR - 4.50-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 5365 AT -40.0 DEGREES C.

PAGE NUMBER B-301

SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT -20.0 DEGREES CENTIGRADE 5365 SUMMARY OF PROPERTIES OF EA

DETERMINED OVER THE 253.0 THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): Am 8.68720, Bm 2778.90, Cm REFERENCE: EC-TR-76058

TEMPERATURE RANGE 30.0 TO 146.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORH) = .58~03 ESTIMATED BOILING POINT(CENT.) = 225.6 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.0 VOLATILITY(MG/METER CUBED)* .73+01 VOLATILI

VOLATILITY(MG/METER CUBED) - .73+01 VOLATILITY(MILLIMOLE/ METER CUBED) - .37-01 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED DUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.1951 WAS CALCULATED FROM THE EQUATION: DENSITY# 1.1755 - .00098 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: NB8484 SUPENDED SOLIDS LIQ

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

ZHURN. FIZ KHIM. 37. 201 (1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPON. DENSITY TEMPERATURE VOLUME PRESSURE

VOLUME CC/MOLE DENSITY TEMPERATURE GM/CC DEG C .3651 453.36 S/ CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .033 DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.97-03

ပ -20.0 DEGREES A 5365 END OF COMPOUND EA

PAGE NUMBER B-302

CONFIDENTIAL

330

THE RESERVE OF THE PARTY OF THE

ZHURN. FIZ KHIM. 37. 201(1963)

FILIPPOV.

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A B. 68720, B 2778.90, C 253.0 DETERMINED OVER THE WERNE USED TO GALCULATE THE FOLLOWING FOUR PROPERTIES: .0 DEGREES CENTIGRADE 5365 EA ö OF PROPERTIES SUMMARY

. 51-02 VAPOR PRESSURE(TORR)=

ESTIMATED BOILING POINT(CENT.) = 225.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.8
VOLATILITY(MG/METER CUBED) = .59+02 VOLATILITY(MILLIMOLE/ METER CUBED) = **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

RANGE ***

.30+00

ON: DENSITY* 1.1755 - .00098 *TEMP.(C.) DETERMINED OVER REFERENCE: NB8484 SUPENDED SOLIDS LIQ DENSITY(G/ML)= 1.1755 WAS CALCULATED FROM THE EQUATION: DENSITY* THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: N

OF THE DATA TEMPERATURE RANGE **** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF DENSITY TEMPERATURE VOLUME PRESSURE GA/CC DEG C CC/MOLE ATM.

28.68 542.84 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .039 DIFFUSION COEF.

CENTIPOISE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.44-03 (THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING TIMODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

.O DEGREES A 5365 END OF COMPOUND EA

ن

PAGE NUMBER 8-303

Appendix D

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE **** 20.0 DEGREES CENTIGRADE SUMMARY

107

TEMPERATURE RANGE 30.0 TO 145.0 DEG. CENT. REFERENCE: EC-TR-76058 WERE USED TO CALCKLATE THE FOLLOWING FOUR PROPERTIES:

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE +*** 14.3 VOLATILITY(MILLIMOLE/ METER CUBED)= ESTIMATED BOILING POINT(CENT.) = 225.6 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = . 35+03 VOLATILITY (MG/METER CUBED) == VAPOR PRESSURE(TORR)=

19+01

N: DENSITY 1.1755 - .00098 "TEMP.(C.) DETERMINED OVER REFERENCE: NB8484 SUPENDED SOLIDS LIQ 1:1559 WAS CALCULATED FROM THE EQUATION: DENSITY= RANGE 25.0 10 40.0 DEG. CENT. REFERENCE: N THE TEMPERATURE RANGE DENSITY(G/ML) =

OF THE DATA TEMPERATURE RANGE **** **** #ARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 里

ATM. DENSITY TEMPERATURE VOLUME GM/CC DEG C CC/MOLE 542.84 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .046 DIFFUSION COEF. ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAPOR # 5.91-03 CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE MODI, JED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

20.0 DEGREES C. AT END OF COMPOUND EA 5365

PAGE NUMBER 8-304

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A* 8.69720, B* 2778.90, C* 253.0 DETERMINED OVER THE WARNING ANTOINE CONSTANTS (EATR 4491): A* 8.69720, B* 2778.90, C* 253.0 DETERMINED OVER THE WERE ISED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

ESTIMATED BOILING POINT(CENT.) = 225.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.6
VOLATILITY(MG/METER CUBED) = .53+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .27+01
VOLATILITY(MG/METER CUBED) = .53+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .27+01
VOLATILITY(MG/METER CUBED) = .53+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .27+01

1.1510 WAS CALCULATED FROM THE EQUATION: DENSITY* 1.1755 - .00098 'TEMP.(C.) DETERMINED OVER RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: NB0484 SUPENDED SOLIDS LIG DENSITY (G/ML) = 1.151(THE TEMPERATURE RANGE

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE 뿙

A?M. 23.68 E VOLUME CC/MOLE 542.84 . 3651

CH.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

CENTIFOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1844) VISCOSITY OF VAPOR 7 G.02-G3 (

25.0 DEGREES 7 \$385 END OF COMPOUND EA

PAGE NUMBER B-305

ESTIMATED BOILING POINT(CENT.) = 225.6

HEAT OF VAPORIZATION(KILOCALGRIES/MOLE) = 14.5

VOLATILITY(MG/METER CUBED) = .16+04 VOLATILITY(MILLIMOLE/ METER CUBED) = .82+01

VENSITY(G/ML) = 1.1363 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1755 - .00098 *TEMP.(C.) DETERMINED DVER

THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: NB8484 SUPENDED SOLIDS LIQ **** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.68720, B* 2778.90, C* 253.0 DETERMINED OVER THE TEMPERATURE TANGE TO SERVED THE TEMPERATURE TANGE TO SET THE TA 40.0 DEGREES CENTIGRADE 5365 TEMPERATURE RANGE 30.0 TO 146.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)= .16+00 SUMJARY OF PROPERTIES OF EA

ZHURN. FIZ KHIM. 37. 201(1963) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. ï

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .053 CIFFUSION COEF. * THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 5.38-03 CENTIPOISE

PAGE NUMBER B-306

ပ

40.0 DEGREES

A

5365

END OF COMPOUND EA

DENTIAL 334

5389 AT -40.0 DEGREES CENTIGRADE FORKULA WEIGHT: 224.3 SUMMARY OF PROPERTIES OF EA COMMON NAME:

GENERAL REFERENCE: ARCSL-18-77001 DETERMINED OVER THE

THE FULLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.19050, B= 2118.40, C= 222.5 DETERMINED TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FULLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .38-04
ESTIMATED BUILING POINT(CENT.)= 269.1
HEAY OF VAPORIZATION(KILOCAAORIES/MOLE)= 15.8
VOLATILITY(MG/METER CUBED)= .59+00 VOLATILITY(MILLIMOLE/ WETER CUBED)= .26-02
+**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.1262 WAS CALCULATED FROM THE EQUATION: SENSITY= (16802 - 100090 *TEMP.(C.) DETERMINED THE TEMPERATURE RANGE 25.0 TQ 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

CVER

**** WÂRNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DETERMINED OVER THE 61.8 IS(EATR 4401): A" -.36660; B* -74.13; C* 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

ARCSL-TR-77001 REFERENCE: / RCSL-TR-7700 MELTING POINT (DEG. CENT.) = -67.9 REFERENCE: FLASH POINT, MCCUTCHAN-YOUNG(CENTICRADE)= 136.0

ZHUSH. FIZ KHIM. 37. 201 (1993) FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPFOV. DENSITY TEMPERATURE VOLUME PRESSURE GRACE. DES C. CC/MOLG. AIM.

663.59 459.20 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .024 DIFFUSION COEF. *

ABOVE CRITICAL PROPERTIES AND THE VISCOSITY OF VAFOR # 4.16-03 CENTIFOISE VAPOR WAS ESTIMATED USING THE EQ., J. PHY. CHEM, 48, 23(1944) THE VISCOSITY OF THE HOSTFLED SUTHERLANDS

ပဲ -CO.O DEGREES <u>~</u> 5339 END OF COMPOUND EA

PAGE NURBER B-30%

GENERAL REFERENCE: ARCSL-TR-77001 -20.0 DEGREES CENTIGRADE FORMULA WEIGHT: 5389 Š SUMMARY OF PROPERTIES OF COMMON MARKET

DETERMINED OVER THE 222.5 7.19050, B= 2118.40, C= REFERENCE: ARCSL-TR-77001 THE FOLLOWING ANTOING CONSTANTS(EATH 4491): Am 64.0 DEG. CENT. 3.0 70 TEMPERATURE RANGE

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: . 53-03 JAPGR PRESSURE(TORR)=

ESTIMATED BOILING POINT(CENT.) = 269.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.1
VOLATILITY(MG/METER CUBED) = .76+01 VOLATILITY(MILLIMOLE/ METER CUBED) = .34-01
**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

.00090 *TEMP.(C.) DETERMINED DVER REFERENCE: ARCSL-1R-7700 DENSITY!G/ML) = 1.1082 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0902 - THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77 DENSITY (G/ML)=

OF THE DATA TEMPERATURE RANGE

DETERMINED DVER THE 47.9 DENSITY'S/ML)= 1.1082 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.

THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCS

THE TEMPERATURE THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.36660, B= -74.13, C= TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERRE USED TO CALCULATE THE VISCOSITY

WERE USED TO CALCULATE THE VISCOSITY 195.2

195.224

OF THE DATA TEMPERATURE NANGE **** ARCSL-TR-77001 REFERENCE: ARCSL-1R-77001 ***** NARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT

MELLING POINT (DEG. CENT.) * -67.0 REFERENCE: FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)* 126.0

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV DENSITY TEMPERATURE VOLUME PRESSURE 17. 17.

201 (1883)

37.

ZMURN. FIZ AMIM.

ATM. 23.65 CC/MOLE 663.59 459,20 22/5.5 3380

CH.SQ./SEC CALCULATED FOR VAPOR IN AIR .029 DIFFUSION COEF.

CERTIPOISE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE Eq., J.PHY.CHEN,48,23(1944) THE VISCUSITY OF THE VAPOR WAS ESTIMATED USING THEODIFIED SUTHERLANDS EQ., J.PHY.CHEN,48,23(1944)

ن -20.0 DEGREES -Z 8389 END OF COMPOUND EA

NUMBER 8-309 PAGE

SSIFIED

GENERAL REFERENCE: ARCSL-TR-77001 .0 DEGREES CENTIGRADE 224.3 GEN 5389 AT FORMULA WEIGHT: E PROPERTIES OF COMMON NAME: Ö SUMMARY

製造の対象に対象が表するとはなる

DETERMINED OVER THE 222.5 7.19050, 8= 2118.40, C= REFERENCE: ARCSL-TR-77001 CONSTANTS(EATR 4491): Am 84.0 DEG. CENT. LLOWING ANTOINE

TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. HEPER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .47*-02 ESTIMATED BOLLING POINT(CENT.)= 269.1

HEAT OF VAPORIZATION(KILOGALORIES/MOLE) = 14.6 VOLATILITY(MG/METER CUBED) = 161402 VOLATILITY(MILLIMOLE/ METER CUBED) = 127+00 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0902 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0962 - .00090 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DETERMINED OVER THE 47.9 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A=

ERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES)= 15.173

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -67.0 REFERENCE: ARCSL-TR-77001 Flash point, McCutchan-Young(Centigrade)= 136.0 Reference: Arcsl-tr-77001

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. PRESSURE 표

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM. . 3880 459.20 663.59 23.65

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCUSITY OF VAPOR * 5.03-03 (

END OF COMPOUND EA 5389 AT ... O DEGREES

ပ

PAGE NUMBER

UNGLASSIFIED

20.0 DEGREES CENTIGRADE 224.3 FORMULA WEIGHT: EA 9 OF PROPERTIES COMMON NAME: SUSERARY

GENERAL REFERENCE: ARCSL-TR-77001

DETERMINED OVER

222.5

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.19050, B= 2118.40, C= TEMPERATURE RANGE 3.0 TO 64.0 DEG. GENT. REFERENCE: ARCSL-TH-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(TORR)= .28~01 14.2 ESTIMATED BOILING POINT(CENT.) = 269.1 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = VOLATILITY(MG/METER CUBED) = .35+03

.00090 *TEMP.(C.) DETERMINED OVER VOLATILITY(MG/METER CUBED)= .35+03 VOLATILITY(MILLIMOLE/ METER CUBED)= DENSITY(G/ML)= 1.0722 WAS CALCULATED FROM THE EQUATION: DENSIT/= 1.0502 - .00 THE TEMPERATURE RANGE 25.0 10 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

RANGE **** WARNING: THE ABOYE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE

DETERMINED OVER THE 47.9 ů THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A. -..36660, B. -74.13, (TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY 5.311 VISCOSITY(CENTISTORES) =

** ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

REFERENCE: ARCSL-TR-77001 * 136.0 REFERENCE: ARCSL-TR-77001 MELTING POINT (DEG. CENT.) = ~67.0 RE FLASH POINT, MCCUICHAN-YOUNG(CENTIGRADE)*

FULLOWING CRITICAL PROPERTIES MERE ESTIMATED USING THE METHOD OF FILIPPOY PRESSURE DENSITY TEMPERATURE VOLUME 뿔

ZHURN. FIZ KHIM. 37. 201(1963)

ATE. 25.65 CC/MOLE 459.20

CM.SQ./SEC CALCULATED FOR VAPOR IN AIR .040 DIFFUSION COEF. #

VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR * 5.47-03 CENTIPDISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING T MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

NUMBER 8-310 PAGE

ပ်

20.0 DEGREES

END OF COMPOUND EA 5389 - AT

GENERAL REFERENCE: ARCSL-TR-77001 25.0 DEGREES CENTIGRADE 224.3 FORMULA WEIGHT: 5389 SUMMARY OF PROPERTIES OF COMMON NAME:

DETERMINED OVER THE 222.5 TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORRIE

VAPOR PRESSURETTONG TO TO TO TO TO THE TEMPERATURE OF THE THE THE TEMPERATURE ANGE TO THE TEMPERATURE OF THE TEMPERATURE RANGE TO TO TO TO TO THE TEMPERATURE OF THE TEMPERATURE

DETERMINED OVER THE 47.9 **5** THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A# -.36660, B# -/4.....
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A# -.36660, B# -/4....
TEMPERATURE ANGE 25.0 10 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001
WERE USED TO CALOULATE THE VISCOSITY(CENTISTOKES)# 4.470

-67.0 REFERENCE: ARCSL-TR-77001

MELTING POINT (DEG. CENT.) * -67.0 REFERENCE: ARCSL-TR-77001 FLASH POINT, MCCUTCHAN-YQUNG(CENTIGRADE)* 136.0 REFERENCE: ARCSL-TR-77001

FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE MSTRDD OF FILIPPOV. DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/NOLE ATM.

ZHURN. FIZ KHIM. 37. 201(1953)

663.89

.041 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR DIFFUSION COEF.

CENTIPOISE THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

25.0 DEGREES AT 5389 END OF COMPOUND EA

PAGE NUMBER B-311

Appendix B

FIED

2HURN, F12 KHIM, 07, 20. (1963)

GENERAL REFERENCE: ARCSL-12-7700: DETERMINED OVER THE 1 5389 AT 40.0 DEGREES CENTIGRADE FORMULA MEIGHT: 224.3 222.5 7.19050, 8x 2118.40, Cm REFERENCE: ARCSL-TR-77001 TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFER MERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESCUREITORN: 13+00 ESTIMATED BOILLING POINT(CENT.)* 269.1 HEAT OF VAPORIZATION(KILCCALORIES/MOLE)* 13.8 VOLATILITY(MG/METER CUBED)* 10+64 VOLATILI THE FOLLOWING ANTOINE CONSTANTS (EATH 4481): A. SUMPLARY OF PROPERTIES OF EA COMMON NAME:

THE RESERVE TO SERVE THE PROPERTY OF THE PROPE

.00090 *TEMP.(C.) DETERMINEU OVER REFERENCE: ARCSL-IR-77001 VOLATILITY(MG/WETER CUBED)= 19+64 YOLATILITY(MILLIMOLE/ METER CUBED)= 5/NSITY(G/ML)= 1.0542 MAS CALCULATED FROM THE EQUATION: DENSITY= 1.0902 - THE TEMPERATURE RANGE 25.0 TO 45 0 DEG. CENT, REFERENCE: ARCSL-TR-770

DETERMINED OVER THE 47.9 TEMPERATURE RANGE 25.0 13 45.0 DEG. CENT. REFERENCE: ARCSL-TK-77001 YERE USED TO CALCULATE THE VISCOSITY 2.998 VISCOSI IY (CENTISTORES).

REFERENCE: ARCSL-TR-77-01 RELTING POINT (DEG. CENT.) * -67.0 REFERENCE: ARGSL-TR-77001 FIRSH POINT, MCCHTCHAN-YOUNG(CENTIGRADE)* 136.0 REFERENCE: A

PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. C. VOLUME. PRESSURE ATM. 23.65 FOLLOWING CRITICAL PROPERTIES DERISTRY TEMPERATURE VOLUME NET COMMUNE 663.59 UEG 0 54/ CC 3386 Ĭ

CENT 1 PO I SE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROFERTIES AND THE VISCOSITY OF VAPOR # 5.90-03 MODIFIEL SUTHERLANDS EQ., J.PHY.CHEM,48.23(1944)

END OF COMPOUND SA \$389 AT 40.0 DEGREES C.

K-18868 8-3:3

PAGE

Appendix B

UNCLASSIFIED

-40.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF CA

EIGHT: 212,2 COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

8.88792, 8* 2946.07, C* 269.7 DETERMINED OVER THE ASFERENCE: FATA-4710, B CORRECTED NBB343 MING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULA! BE VALID HNLESS LIQUID SUPERCOSLS TO SPECIFIED TEMPERATURE ***** THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): Ax CONTRACTOR

TEMPERATURE RANGE 60.0 TO 155.0 DEG. DENT: ASFERI WERE USED TO CALCOUATE THE FULLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .12-03 ESTIMATED BOILING PUINT(CENT.) = .223.7 HEAT OF VAPORIZATION(KILOCALGRIES/MOLE) = .32.7 VOLATILITY(MG/METER CUBED) = .17+01 VOLATILITY(WILLIMOLE/ METER CUBED) = .79-02 ***** MARNING: THE ABOVE VALUES ARE EXTRAPOL*TED OUT OF THE DATA TEMPERATURE RANGE *****

PAGE NUMBER 3-213

"40.0 DECREES C.

-

5403

SNO OF COMPOUND EA

Appendix B

CONFIDENTIAL

***** MARNING: SINCE THERE IS NO MELING POINT FORMULA WELGHT: 212.2

***** MARNING: SINCE THERE IS NO MELING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FCLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.08792, B* 2945.07, C* 269.7 DETERMINED OVER THE TEMPERATURE RANGE 60.0 TO 150.0 DEG. CENT. REFERENCE: EATR-4710, B CORRECTED NBB343

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: -20.0 DEGREES CENTIGRADE SUMWARY OF PROPERTIES OF EA

VAPOR PRESSURE(10RR) = .12-02
ESTIMATED BJILING POINT(CENT.) = 220.7
HEAT OF VAPORIZATION(KILOCALDRIES/MOLE) = 13.8
VOLATILITY(MG/METER CUBED) = .17+02 VOLATILITY(MILLIMOLE/ METER CUBED) = .78-01
****** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

PAGE NUMBER 8-314

-20.0 DEGREES C.

5403

END OF COMPOUND EA

Appendix B

.0 DEGREES CENTIGRADE

SUMMARY OF PROPERTIES OF EA

MING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE SANTONES LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

ING ANTOING CONSTANTS(EATR 4491): A* 8.08792, B* 2946.07, C* 269.7 DETERMINED OVER THE TO CALCULATE TO CALCULATE THE THE CALCULATE THE TO CALCULATE THE THE TO CALCULATE THE THE CALCULATE THE CALCU

VAPOR PRESSURE(TORR)= WERE USED 1

ESTEMATED BOILING POINT(CENT.)* 220.7 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* 13.8 VOLATILITY(MG/METER CUBED)* .11+03 VOLATILITY(MILLIMOLE/ METER CUBED)* .54+00 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

PAGE NUMBER 8-315

.O DEGREES

¥

5403

END OF COMPOUND EA

Appendix B

5

IGHT: 212.2 COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 8.88792, 8* 2946.07, C* 269.7 DETERMINED OVER THE REFERENCE: EATR-4710,8 CORRECTED NB8343 VOLATILITY(MG/METER CUBED)= .61+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .29+01 +**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***** SPECIFIED TEMPERATURE THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* 8.88
TEMPERATURE RANGE 60.0 TO 150.0 DEG. GENT. REFER
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

20.0 DEGREES CENTIGRADE

SUMMARY OF PROPERTIES OF

PAGE MUMBER 8-316

20.0 DEGREES C.

5403

END OF COMPGUND EA

NG: SINCE THERE IS NO MELTING FOINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

G ANTOINE CONSTANTS(EATR 4491): A* 8.63792, B* 2946.07, C* 269.7 DETERMINED OVER THE RANGE 60.0 TO 150.0 DEG. GENT. REFERENCE: EATR-4710,B CORRECTED NBB343 VOLATILITY(MG/METER CUBED) .. .89+03 VOLATILITY(MILLIMOLE/ METER CUBED) .. .42+01 13.8 ESTIMATED BOILING POINT (CENT.)= 220.7 HEAT OF VAPORIZATION KILOCALORIES/MOLE)= VOLATILLIY(MG/METER CUBED)= .89+03 ING ANTOINE CONSTANTS(EATR 4491):

END OF COMPOSIND EA 5403 AT 25.0 DEGREES C.

PAGE NUMBER 8-317

CONFIDENTIAL

KERE

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTOINE CONSTANTS (EATR 449): A # 8.88792, B # 2946.07, C # 269.7 DETERMINED OVER THE WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TO DE CALCULATE THE FOLLOWING FOUR PROPERTIES: VOLATILITY(MG/METER CUBED) 3.28+04 VOLATILITY(MILLIMOLE/ METER CUBED) 12+02 12+02 ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** HEAT OF VAPORIZATION (KILOCALORIES/MOLE). ESTIMATED BOILING POINT (CENT.) = 220.7

40.0 DEGREES C. PAGE NUMBER B-318

AT

5403

END UP COMPOUND EA

COMPIDENTIAL

COMMON MAME: FORMULA WEIGHT: 212.2
GENERAL METERNOR POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT SE MALIO UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
LOWING ANTOINE CONSTANTS(EATH 4491): A* 9.70800, B* 3320.35, C* 262.4 DETERMINED OVER THE -40.0 DEGREES CENTIGRADE 5414 TEMPLOATURE RANGE GOLD TO 155.0 DEG. CENT. REFER THE FOLLOWING ANTOINE CONSTANTS (EATH 4491): A. SUMPLY OF PROPERTIES OF EX * (BUCL) BRESSHE WOORK

END OF COMPOUND EA 5414 AT -40.0 DEGREES C.

#31afility(MG/METER CUSED) # .87-01 .0LATILITY(MILLIMOLE/ METER CUSED) # .41-03

15.7

ESTIMATED SCILING POINT(CENT.) 4 224.1 HEAT OF MAPORIZATION(NILOCALGRIES/NOLE) + JOLATILITY(NG/MRTER CUSED) + .87-01

PAGE NUMBER 8-319

Appendix B

COMPOSNIAL

SEGRARRY DE PROPERTIES UP EA 5414 AT -20.0 DEGREES CENTIGRADE

COMMON RAWE! FORMULE WEIGHT: 212.2 GENTRAL HEFERENCE! EATR-4710

CALCULATION OF VALUES BELOW DATA RANCE HAY NOT

SE VALIS UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPENATURE *****

SE VALIS UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPENATURE *****

SE VALIS UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPENATURE *****

SERVICHE RAYGE BOOK THE EST WATED BOILING POINT (CENT.) = 224.1
HENT OF VAPORIZATION (KILDCALORIES/MOLE) = 10.8
VOLATILITY (MC/MGTES CUBED) = .14+01 VOLATILITY (MILLIMOLE/ METER CUBED) = .64-U2
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5414 AT -20.0 DEGREES C.

PAGE NUMBER 8-320

SUCRARY OF PROPERTIES OF EA 5414 AT ...O DEGREES CENTIGRADE COMMON NAME:
COMMON NAME:
FURNILLA WEIGHT: 212.2
GENERAL REFERENCE: EATR-4710
BE VALID UNLESS LIQUID SUPERCOCLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A 9.70600, B 3320.35, C" 262.4 DETERMINED OVER THE

PER FOLLOWING ANIONE CONSTRUCTORY.

PERFORMED ANGER 80.0 TO 185.0 DEG. CENT.

PERFORMED ANGER 10.0 TO 185.0 DEG. CENT.

PERFORMED ANGER 10.0 TO 185.0 DEG. CENT.

PERFORMED BOLLING POINT (CENT.) = 224.1

ESTIMATED BOLLING POINT (CENT.) = 16.4

POINT CF VAPORIZATION (KILOCALGRIES/MOLE) = 16.4

VOLATILITY (MC/METER CURED) = .14+02 VOLATILITY (MILLIMOLE/ METER CURED) = .66-01

***** MARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

PAGE NUMBER 13-321

***** 5414 END OF COMPOUND EA

.O DEGREES C.

PAGE NUMBER 8-322

20.0 DECREES C.

.

4133

END OF COMPOUND EA

NTIAL

**** MARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF :*LUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTION OF :*LUES BELOW DATA RANGE MAY NOT THE FOLLOWING ANTION UNLESS LIQUID SUPERCOULS TO SPECIFIED TEMPERATURE ****

THE FOLLOWING ANTIONE CONSTANTS(EATR 4491): A* 9.70609, B* 3320.35, C* 262.4 DETERMINED DVER THE TEMPERATURE HANGE BO O TO 155.0 DEG. CENT. REFERENCE: EATR 4710 ESTIGNATED BOILING POINT(CENT.) = 224.1
HEAT OF VAPORIZATION(KILDCALORIES/MOLE) = 16.3
VOLATILITY(MG/METER CUBED) = ,16+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .76+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** 25.0 DEGREES CENTIGRADE TEMPERATURE RANGE BO 0 TO 155.0 DEG. CENT. REFER WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES: VAPOR PRESSURE(10RR)= .14-01 SURMARY OF PROPERTIES OF EA

25.0 DEGREES C. PAGE NUMBER 8-323

AT

5414

END OF COMPOUND EA

SURMARY OF PROPERTIES OF EA 5414 AY 40.0 DEGREES CENTIGNADE

COMMANDA NAME:
FORMULA WEIGHT: 212.2
GENERAL REFERENCE: EATH-4710

BE VALID UNLESS LIQUID SUPERCOSES TO SPECIFIED TEMPERATURE *****

FUR FOLICAING ANTOINE CONSTANTS(EATH-461): A* 9.70600, B* 3320.35, C* 262.4 DETEMBLED OVER THE

FOLICAING ANTOINE CONSTANTS(EATH-461): A* 9.70600, B* 3320.35, C* 262.4 DETEMBLED OVER THE

FURPERATURE RANGE 80.0 TO 155.0 DEG. CFNT. REFERENCE: EATH 4710

VAPOR PARESUAE(TORN)*
SSS-01

CSTIMATED GOILING POINT(CENT.)* 224.1

HEAT OF VAPORIZATION(NILOCALORIES/MOLE)*
VOLATILITY(MG/METER CUREO)*

VOLATILITY(MG/METER CUREO)*

VOLATILITY(MG/METER CUREO)*

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOSED EA 5414 AT 40.0 DEGREES C.

PAGE NUMBER 13-324

VAPOR PRESSURE(TORA)* .42-05 ESTIMATED BILLING POINT(CENT.)* 304.8 HEAT OF VAPARIZATION(KILOCALORIES/MOLE)* 14.7 VOLATILITY(R3/METER CUBED)* .68-01 VOLATILITY(MILLIMOLE/ WETER CUBED)* .29-03 **** MARIINC: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE **** -40.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

PACE NUMBER 8-325

-40.0 DEGREES C.

F.

5488

END OF COMPOUND EA

Appendix B

COMMON NAME:
FORMULA WEIGHT: 236.2
GENERAL REFERENCE: EATR 4710
BE VALID UNLESS LIQUID SUPERCOULS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS (ENTERPRINE *****
TEMPERATURE RANGE 130.0 TO 215.0 DEG. CENT. REFERENCE: EATR 4710
VAPOR PRESSURE(TORR):
ESTIMATED BOXENTY FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR):
ESTIMATED BOXENTY:

COMMON NAME AND THE FOLLOWING FOUR PROPERTIES:

COMMON NAME AND THE FOLLOWING FOUR PROPERTIES:

Appendix B

PAGE NUMBER 8-326 -20.0 DEGREES C. 5488 AT

END OF COMPOUND EA

COMMON NAME:

FORMULA WEIGHT: 235.2

GENERAL REFERENCE: EATR 4710

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

FOLLOWING ANTOINE CONSTANTS(EATR 4491): A** 8.46292, 8** 3226.38, C** 273.2 DETERMINED OVER THE VAPOR PRESSURE(TGRR)= .45-03 ESTIMATED GOILING POINT(CENT.)= 304.8 HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 14.7 VOLATILITY(MG/METER CUBED)= .62+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .26-01 .0 DEGREES CENTIGRADE 233.2 GEN WERE USED TO CALCULATE "HE FOLLOWING FOUR PROPERTIES: TEMPERATURE RANGE 130.0 TO 215.0 DEG. CENT.

5460

SUNTARY OF PROPERTIES OF EA

.0 DEGREES C. 5488 END OF COMPOUND EA

PAGE NUMBER 8-327

Appendix B

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE YALLD UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***** 20.0 DEGREES CENTIGRADE UNMENTED THE STATE OF THE STATE SUMMARY OF PROPERTIES OF EA

END OF COMPOUND EA 5488 AT 26.0 DEGREES C.

PAGE NUMBER 8-328

CONFIDENTIAL

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALLD UNIESS LIQUID SUPERCOGLS TO SPECIFIED TEMPERATURE ***** 25.0 DEGREES CENTIGRADE 8.46292, 8. 3226.38, C. REFERENCE: EATR 4710 5488 OF PROPERTIES OF EA

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): WERE USED 1

ESTIMATED BOILING POINT(CENT.) = 304.8 HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.7 VOLATILITY(MG/METER CUBED) = .58402 VOLATILITY(MILLIMOLE/ MSTER CUBED) = .24+00 ***** WARSING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

¥

5488

END OF COMPOUND EA

PAGE NUMBER B-329

CONFIDENTIAL

SUMMARY

CONFIDENTIAL

COMMON NAME:

COMMON NAME:

COMMON NAME:

FORMULA WEIGHT: 236.2

FORMULA WEIGHT: 236.2

FORMULA WEIGHT: 236.2

FORMULA MEIGHT: 236.3

FOR 40.0 DEGREES CENTIGRADE SUMMARY OF PROPERTIES OF EA

END OF COMPOUND EA 5488 AT 40.0 DEGREES C.

PAGE NUMBER 8-330

CONFIDENTIAL
358

:\$

APPENDIX C

USE OF THE ANTOINE EQUATION TO FIT VAPOR PRESSURE DATA (U)

Blank

APPENDIX C

USE OF THE ANTOINE EQUATION TO PIT VAPOR PRESSURE DATA (U)

(U) Vapor pressure data plays an important role in the development of defense against chemical agents; some areas where vapor pressure plays a critical role are listed in Table C-1.

Table C-1. (U) Areas in Which Vapor Pressures Play a Critical Role in Chemical Defense

Percutaneous toxicity

Fabric penetration by vapor transfer

Inhalation toxicity

Persistency and threat calculations

Chemical decontamination activity coefficients of kinetic equations

Dissemination

Munition design

Doctrine studies

Jet exhaust decontamination

UNCLASSIFIED

(U) The Antoine equation is defined as follows:

$$Log_{10}P = A-B/(t+C)$$

(C-I)

where

P = vapor pressure,

t " temperature in contigrade, and

A, B, & C = constants.

A & B are constants that vary widely for different compounds. C is a constant that does not vary greatly from compound to compound and is frequently close to 230.

(B) A recent data compilation questions the use of the Antoine equation which is used extensively in this report. In reference 2, it is stated that the Antoine equation fits the data well. "but gives unrealisateally high values at higher temperatures." No justification for this opinion is provided.

Appendix C

(U) Table C-2 lists the reasons why the Antoine equation has been chosen for correlating and extrapolating vapor pressure data. Some problems dealing with fitting data to the Antoine equation do occur with the current computer program; 3 see table C-3. However, studies are being conducted on these problems and preliminary results have been reported by Celmins. 4

Table C-2. (U) Advantages of Using the Antoine Equation for Extrapolations

- Numerous comparisons with other equations have been reported in published literature.
- 2. The Antoine equation:
 - accurately fits the data of hundreds of compounds over a wide range of temperatures.
 - is close to the Clausius-Clapeyron equation.
 - · has only three parameters.
 - · contains no polynomials.

UNCLASSIFIED

Toble C-3. (U) Problems in Using the Antoine Equation

- 1. Current computer program³ gives an estimate of the quality of fit, but does not give an estimate of error of specific vapor pressures.
- While the program fits the data very well, there are some logical problems in the routine (not in the Antoine equation) that might reduce the quality of extrapolations.
- 3. Antoine equation extrapolations close to the critical point tend to be low.

UNGLASSIFIED

- (U) The Antoine equation was chosen for use at CSL after a careful study of the literature and in-house testing of many equations. A number of physical chemists participated in the decision. A more recent study tends to confirm the correctness of this decision. Trump⁵ states, "In each case the Antoine equation gave a closer fit... and was therefore the preferred correlating equation. The Chebyshev equation produced deviations about twice as large."
- (0) The consensus in the chemical literature is that the Antoine equation gives good fits at low temperatures; but, the extrapolations up to a reduced temperature of 0.75 with the Antoine equation result in low values. Therefore, equations 1 and 2 (reference 2) which give even lower values cannot provide superior extrapolations as reported. The errors introduced from the use of such equations are quite large. Figure C-1 shows

that equation 1 (reference 2) does not pass through any of the data points and that equation 2 passes through only the top two points, an insufficient number for the extrapolation of a curving line. Equation 2 actually goes through a maximum vapor pressure at the highest temperatures.

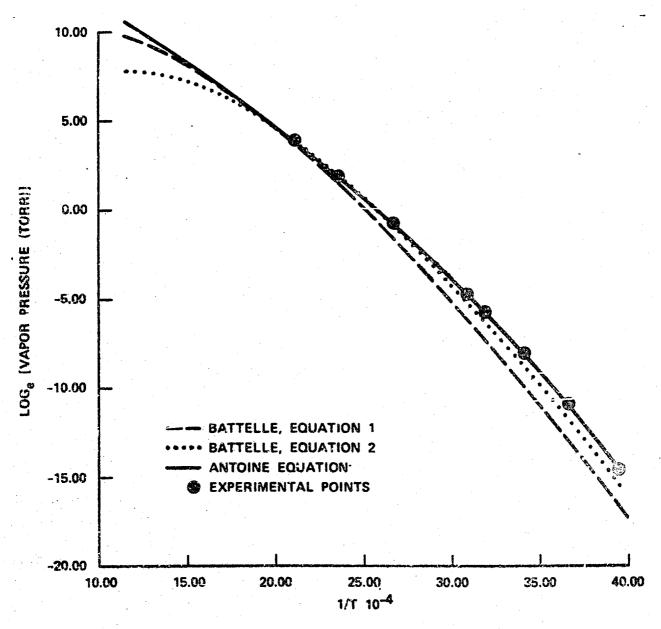


Figure C-1. (U) Comparison of Antoine Equation With Other Equations.

Blank

LITERATURE CITED (U)

- 1. Antoine, M. C. Thermodynamics-Vapor Pressures: A New Relation Between Pressures and Temperatures. Comptes Rendus. 107, 681 (1888).
- 2. Tomlinson, G. J., and Samuel, A. H. Chemical Systems Laboratory Contract Report CR-80051. Literature Survey of Physical and Chemical Properties of Agents VX, GD, HD and HL. Vol. I. Battelle, Washington Operations. July 1980. UNCLASSIFIED Report.
- 3. Penski, E. C., and Latour, L. J. Edgewood Arsenal Technical Report EATR 4491. Conversational Computation Method for Fitting the Antoine Equation to Vapor Pressure-Temperature Dala. February 1971. UNCLASSIFIED Report.
- 4. Celmins, A. Ballistic Research Laboratory Interim Memorandum Report 741. Error Analysis of Vapor Pressure Measurements. April 1982. UNCLASSIFIED Report.
- 5. Trump, W. N. Comparison of the Antoine Equation and a 3 Term Chebysnev Equation for Correlation of Vapor Pressures. Computers and Chemistry. 4, 117 (1980).
- 6. Ambrose, D. The Correlation and Estimation of Vapor Pressures, p 193. Proceedings of the National Physics Laboratory, Conference on Chemical Thermodynamic Data on Fluids and Fluid Mixtures. IPC Science Tech Press, Guilford England.

Blank

UNCLASSIFIED

366

DISTRIBUTION LIST 2

Names	Copies	Names	Coples
CHEMICAL RESEARCH AND DEVELOPMEMNT	CENTER	Federal Emergency Management Agency	
	•	Office of Research/NPP	
ATTN: DRSMC-CLB (A)	. 1	ATTN: Divid W. Bensen	1
ATTN: DRSMC-CLB-C (A)	1	Washington, DC 20472	
ATTN: DRSMC-CLB-PO (A)	1	"do", "g, ", "	
ATTN: DRSMC-CLB-R (A)	1	HODA (DAMA-CSS-C)	1
ATTN: DRSMC-CLB-R(M) (A)	•	Washington, DC 20310	•
ATTN: DRSMC-CLB-R(S) (A)	•	#d3#/11g10#, 50 205/0	
ATTN: DRSMC-CLB-T (A)	1	HQ Sixth US Army	
	1	ATTN: AFKC-OP-NBC	1
	1		ļ
ATTN: DRSMC-CLC-C (A)	1	Presidio of San Francisco, CA 94129	
ATTN: DRSMC-CLC-E (4)	1		
ATTN: DRSMC-CLF (A)	1	Commander	
ATTN: DRSMC-CLJ-IL (A)	2	DARCOM, STITEUR	
ATTN: DRSMU-CLJ-IR (A)	1	ATTN: DRXST-STI	. 1
ATTN: DRSMC-CLJ-M (A)	1	Box 48, APO New York 09710	
ATTN: DRSMC-CLN (A)	1		
ATTN: DRSMC-CLT (A)	1	Commander	
ATTN: DRSMC-CLW-C (A)	• • •	USASTCFEO	
ATTN: DRSMC-CLW-P (A)	. 1	ATTN: MAJ Mikeworth	1
ATTN: DRSMC-CLY-A (A)	1	APO San Francisco 96328	
ATTN: DRSMC-CLY-R (A)	6		
		Commander	
COPIES FOR AUTHOR(S)		USA Nuclear & Chemical Agency	
ATTN: DRSMC-CLB-CP	13	ATTN: MONA-WE	1
RECORD COPY: DRSMC-CLB-A (A)	1	7500 Backiick Rd, Bidg 2073	
	4 · · · •	Springfield, VA 22150	
DEPARTMENT OF DEFENSE			
		Army Research Office	
Administrator		ATTN: DRXRO-CB (Dr. R. Ghirardelli)	1
Defense Technical Information Cente	r	P.O. Box 12211	
ATTN: DTIC-DDA-2	2	Research Triangle Park, NC 27709	
Cameron Station, Building 5			
Alexandria, VA 22314		OFFICE OF THE SURGEON GENERAL	
Director		Commander	
Defense Intelligence Agency		USA Medical Bloengineering Research	
ATTN: DB-4G1	. 1	and Development Laboratory	
Washington, DC 20301		ATTN: SGRD-UBD-AL, Bldg 568	1
		Fort Dotrick, Frederick, MD 21701	
Commander			
USASED, USAINSCOM		Commander	
ATTN: IAFM-SED-111	1	USA Medical Research Institute of	
Fort Weade, MC 20755	•	Chemical Defense	
1011 madde, mc 20777		ATTN: SGRD-UV-L	1
DEPARTMENT OF THE ARMY		Aberdeen Proving Ground, MD 21010	•
CECANIMENT OF THE ARMI		ADDITION IN CLASSING OF COURTS, MD 27010	
HODA (DANO-NOC)	•		
HQDA (DAMO-NCC)	1 .		
WASH DC 20310			

3

On the state of th	0
Commander	Commander
US Army Environmental Hygiene Agency	USA Natick Research and Development
ATTN: HSHB-0 (B. Donovan)	Laboratories
Aberdeen Proving Ground, MD 21010	71111
	ATTN: DRDNA-IC
US ARMY MATERIEL DEVELOPMENT AND	ATTN: DRDNA-ITE (Dr. Roy W. Roth) 2
READINESS COMMAND	Artic block in the lay in the lay
	Natick, MA 01760
Commander	
HQ, DARCOM	US ARMY ARMAMENT, MUNITIONS AND
ATTN: DRCED (BG Robinson)	CHEMICAL COMMAND
300: Elsenhower Ave	
Alexandria, VA 22333	Commander
	USA Armament, Munitions and
Commander	Chemicai Command
USA Materiel Development and	ATTN: DRCSM-ASN (R)
ReadIness Command	ATTN: DRCSM-IRW (R)
ATTN: DRCSF-P	Rock Island, 1L 61299
5001 Eisenhower Ave	
Alexandria, VA 22333	Commander
	USA Dugway Proving Ground
Project Manager Smoke/Obscurants	ATTN: Technical Library (Docu Sect) 1
ATTN: DRCPM-SMK-S 3	Dugway, UT 84022
Aberdeen Proving Ground, MD 21005	
	US ARMY ARMAMENT RESEARCH AND
Commender	DEVELOPMENT CENTER
USA Foreign Science & Technology Center	
ATTN: DRXST-MT3	Commander
220 Seventh St., NE	USA Armament Research and
Charlottesville, VA 22901	Development Center
	ATTN: DRSMC-LCA-L (D) 1
Director	ATTN: DRSMC-LCE-C (D)
USA Materiel Systems Analysis Activity	ATTN: DRSMC-LCU-CE (D) 1
ATTN: DRXSY-MP 1	ATTN: DRSMC-SCA-T (D) · 1
ATTN: DRXSY-CR (Mr. Metz) 1	ATTN: DRSMC-SCM (D) 1
Aberdeen Proving Ground, MD 21005	ATTN: DRSMC-SCP (D) 1
	ATTN: DRSMC-SCS (D)
Commender	ATTN: DRSMC-TDC (D) (Dr. D. Gyorog) 1
USA Missile Commend	ATTN: DRSMC-TSS (D) 2
Redstone Scientific information Center	ATTN: DRCPM-CAWS-AM (D) 1
ATTN: DRSMI-RPR (Documents) 1	Dover, NJ 07801
Redstone Arsenal, AL 35898	
	USA Armament Research and
Director	Development Center
DARCOM Field Safety Activity	Resident Operations Office
ATTN: DRXOS-C	ATTN: DRSMC-TSE-OA (Robert Thresher)
Charlestown, IN 47111	National Space Technology Laboratories
	NSTL Station, Mississippl 39529
	Commander
	AMMCOM
	ATTN: DRSMC-QAC-E (A)
	Aberdeen Proving Ground, MD 21010

Commander		Commander	
USA Technical Detachment	1	USA Combined Arms Center and	
US Naval EOD Technology Center	•	Fort Leavenworth	
- ·		ATTN: ATZL-CAM-IM	1
indian Head, MD 20640		Fort Leavenworth, KS 66027	•
HE ADMY TO LIVING & DOCTOINE COMMAND		TOTT EGBYSTROTTING NO DOOL.	
US ARMY TRAINING & DOCTRINE COMMAND		US ARMY TEST & EVALUATION COMMAND	
		02 MMI 1531 & EANTONITON COMMUND	
Commandant		Commander	
USA Infantry School	1	USA Test & Evaluation Command	
ATTN: CTDD, CSD, NBC Branch	•	ATTN: DRSTE-CT-T	1
Fort Benning, GA 31905			•
0		Aberdeen Proving Ground, MD 21095	
Commandant		DEPARTMENT OF THE NAVY	
USA Missile & Munitions Center		DEPARTMENT OF THE NAVI	
and School	•	Chief of Naval Research	
ATTN: ATSK-CM	1	ATTN: Code 441	1
ATTN: ATSK-TME	1		•
Redstone Arsenal, AL 35898		800 N. Quincy Street	
		Arlington, VA 22217	
Commander		5 • • • • • • • • • • • • • • • • • • •	
USA Logistics Center		Project Manager	
ATTN: ATCL-MG	1	Theatre Nuclear Warfare Project Office	•
ATTN: DLSIE	1	ATTN: PM-23 (Dr. Patton)	
Fort Lee, VA 23801		ATTN: TN-09C	ı
		Navy Department	
Commandant		Washington, DC 20360	
USA Chemical School			
ATTN: ATZN-CM-C	1	Commander	
ATTN: ATZN-CM-AFL	2	Naval Explosive Ordnance Disposal	
ATTN: ATZN-CM-TPC	2	Technology Center	
Fort McClellan, AL 36205	* *	ATTN: AC-3	1
		Indian Head, MD 20640	
Commander			
USAAVNC		Commander	
ATTN: ATZQ-D-MS	1	Naval Surface Weapons Center	_
Fort Rucker, AL 36362		Code G51	1
		Dahlgren, VA 22448	
Commander			
USA Infantry Center		Chief, Bureau of Medicine & Surgery	
ATTN: ATSH-CD-MS-C	1	Department of the Navy	
Fort Benning, GA 31905		ATTN: MED 3C33	1
		Washington, DC 20372	
Commander			
USA Training and Doctrine Command		Commander	
ATTN: ATCD-N	1	Naval Air Development Center	
Fort Monroe, VA 23651		ATTN: Code 2012 (Dr. Robert Helmbold)	1
		Warminster, PA 18974	
Commander			
USA Armor Center		US MARINE CORPS	
ATTN: ATZK-CD-MS	1		
ATTN: ATZK-PPT-PO-C	1	Commandant	
Fort Knox, KY 40121		HQ, US Marine Corps	
		ATTN: Code LMW-50	;
		Washington, DC 20300	

ج

CONFIDENTIAL

UNCLASSIFIED

(This page is unclassified)

		USAF SC	
Commanding Ganeral		ATTN: AD/YQ	1
Marine Corps Development and		ATTN: AD/YQO (MAJ Owens)	1
Education Command		Egiin AFB, FL 32542	
ATTN: Fire Power Division, D091	1		
Quantico, VA 22134		AD/XRO	1 -
,		Egiln AFB, FL 32542	
DEPARTMENT OF THE AIR FORCE			
		USAFSAM/VN	
Department of the Air Force		Deputy for Chemical Defense	
Headquarters Foreign Technology Division		ATTN: Dr. F. Wesley Baumgardner	1
ATTN: TOTR	1	Brooks AFB, TX 78235	
Wright-Patterson AFB, OH 45433		•	
		AMD/RDTK	
ASD/AESD	1	ATTN: LTC T. Kingery	1
Wright-Patterson AFB, OH 45433		Brooks AFB, TX 78235	
• • • • • • • • • • • • • • • • • • • •			
AFAMRL/TS		AMD/RDSM	1
ATTN: COL Johnson	1	Brooks AFB, TX 78235	
Wright-Patterson AFB, OH 45433			
		AMD/ROSX	1
AFAMRL/HE		Brooks AFB, TX 78235	
ATTN: Dr. Clyde Reploggie	1		
Wright-Patterson AFB, OH 45433		OUTSIDE AGENCIES	
•			• .
AFWAL/FIEEC (Wendel! Banks)	1	Sattelle, Columbus Laboratories	
Wright-Patterson AFB, OH 45433		ATTN: TACTEC	1
		505 King Avenue	
HQ AFSC/SDZ	1	Columbus, OH 43201	
ATTN: CPT D. Riediger			
Andrews AFB, MD 20334		Toxicology Information Center, JH 652	
		National Research Council	1
HQ, AFSC/SDNE	1	2101 Constitution Ave., NW	
Andrews AFB, MD 20334		Washington, DC 20418 .	
HQ, AFSC/SGB	1	Center for Disease Control	
Andrews AFB, DC 20334		ATTN: Logging Control Officer	
		Mrs. M. Brocato (W.L.Webb)	1
HQ, NORAD		Atlanta, GA 30333	
ATTN: J-3TU	1 -		
Peterson AFB, CO 80914		Director	
		Central Intelligence Agency	
HQ AFTEC/TEL	1	ATTN: AMR/ORD/DD/S&T	. 1
Kirtland AFB, NM 87117		Washington, DC 20505	
USAF TAWC/THL	1	ADDITIONAL ADDRESSEE	
Egiln AFP, FL 32542			
		Commandant	
AFATL/DLV	1	Academy of Health Sciences, US Army	
Egiln AFB, FL 32542		ATTN: HSHA-CDH	1
		ATTN: HSHA-IPM	2
		Fort Sam Houston, TX 78234	



CONFIDENTIAL

(This page is unclassified)

Commander		AFATL/DLY (Dr. J. Carnette)	1
Chemical Research and Development Center		Eglin AFB, FL 32542	
ATTN: DRSMC-CLB-CP	1		
ATTN: DRSMC-CLB-P	1	AD/DLV (Lt E. Frazer)	1
ATTN: DRSMC-CLC	1	Eglin AFB, FL 32542	•
ATTN: DRSMC-CLD	1		
ATTN: DRSMC-CLN-D	1	Commanding Officer	
ATTN: DRSMC-CLP	1	Naval Intelligence Support Center	
ATTN: DRSMC-CLW	1	4301 Suittend Road	
Aberdeen Proving Ground, MD 21010		Washington, DC 20390	
Commender		Chief of Naval Research	
US Army Armement Research and		ATTN: Code 443	1
Development Center		800 N. Quincy St.	
ATTN: DRSMC-RAI-C (A) (Mr. A. Pfister)	2	Arlington, VA 22217	
Aberdeen Proving Cround, MD 21010			
		Commande:	
Director		Naval Weapons Center	
USA Armament Research and		ATTN: Code 343 (Tech Library)	1
Development Center (BRL)		China Lake, CA 93555	•
AMCCOM			
ATTN: DRSMC-TSB-B	1		
Aberdeen Proving Ground,MD 21005			

REQUEST FOR/OR NOTIFICATION OF REGRADING ACTION

28 November 2001

For use of this form, see AR 380-5; the proponent agency is OACSI.

FILE

READ INSTRUCTIONS ON REVERSE SIDE BEFORE COMPLETING THIS FORM

TO: (Include ZIP Code)
Defense Technical Information Center (DTIC)
8725 John J. Kingman Road, Suite 0944
Fort Belvoir, Va 22060-6218

FROM: (Include ZIP Code)
Commander, U.S. Army Soldier and Biological Chemical
Commander, ATTN: AMSSB-SIS (Mr. McClain)
Blackhawk Road, Aberdeen Proving Grounmd, MD

21010-5424

THE DOCUMENT(S) DESCRIBED BELOW HAS/HAVE BEEN REVIEWED FOR REGRADING AND ACTION HAS BEEN TAKEN AS
INDICATED. APPROPRIATE ACTION SHOULD BE TAKEN TO MARK YOUR COPIES AND NOTIFY ALL RECIPIENTS TO WHOM
ADDITIONAL DISTRIBUTION WAS FURNISHED IN ACCORDANCE WITH AR 380-5. DOCUMENTS CONCERNING THIS SAME
SUBJECT SHOULD BE REVIEWED FOR POSSIBLE REGRADING.
REQUEST DOCUMENT(S) DESCRIBED BELOW BE REVIEWED TO DETERMINE WHETHER THEY CAN BE DOWNGRADED OR
DECLASSIFIED AT THIS TIME. (Include justification in the "REMARKS" section of this form.)
REQUEST APPROPRIATE CLASSIFICATION/REGRADING INSTRUCTIONS FOR DOCUMENTS DESCRIBED BELOW.

CONTROL NUMBER	DESCRIPTION (TYPE, FILE REFERENCE, UNCLASSIFIED SUBJECT OR SHORT TITLE,	CLASSIFICATION/ REGRADING INSTRUCTIONS	
	INDORSEMENTS, INCLOSURES)		NEW
ARCSL-SP-83015 ADC 033491	Physical Properties of Standard Agents, Candidate Agents, and Related Compounds at Several Temperatures	С	U

PRINTED OR TYPED NAME AND TITLE OF OFFICER

Marlin Julian

Chief, Edgewood Area Security Team

SIGNATURE

EDITION OF 1 SEP 62 S OBSOLETE.

REMARKS Even though these documents are not classified, they are not cleared for public release. The following statement should apply. This information is subject to EXPORT CONTROL LAWS. These documents contain techical data whose export is restricted by the Arms Export Control Act (Title 22 U. S. C Sec. 2751, et. seq) or Executive Order 12470. Violators of these export laws are subject to severe criminal penalties. **ACTION TAKEN OR RECOMMENDED BY RECIPIENT** INSTRUCTIONS 3. The abbreviations authorized by DoD 5200.1-R and AR 1. Prepare sufficient number of copies to furnish one copy to each addressee of the original document and one copy 380-5 will be used to indicate the old and new classifications for retention. Entries on form may be printed in ink. and regrading instructions. Include declassification dates. 2. Care will be taken to completely identify the document(s) 4. When the document(s) will be regraded upon the occurbeing regraded to prevent error by the recipient. All rence of an event, the classification will be followed by an inclosures being regraded will be accounted for. When coverasterisk (*) and the event described at the bottom of the ing document only is being regraded and there are incloform or in the "REMARKS" section, above. sures (classified or unclassified) which are not being regraded, the symbol "n/c" will be entered in the OLD/NEW columns. 5. When the form is used as a request for review, the need

for a lower classification for the document or documents

will be shown.

The regrading form will contain unclassified information only.

subject or title except when a formal short title has been assigned.

Short titles will consist of the first letter of each word in the

REPLY TO ATTENTION OF

DEPARTMENT OF THE ARMY US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND EDGEWOOD CHEMICAL BIOLOGICAL CENTER 5183 BLACKHAWK ROAD

ABERDEEN PROVING GROUND, MD 21010-5424

RDCB-DPC-RS

FEB 18 2016

MEMORANDUM THRU Director, Edgewood Chemical Biological Center, (RDCB-D/Dr. Joseph L. Corriveau), 5183 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-3424

FOR Defense Technical Information Center (DTIC), 8725 John J. Kingman Road, Ft Belvoir, VA 22060-6218

SUBJECT: Request for Change in Distribution

- 1. This action is in response to an Edgewood Chemical Biological Center (ECBC) internal request for a Change in Distribution for the attached listed documents.
- 2. The listed documents have current distribution statements or classifications which limit their release. ECBC Subject Matter Experts have reviewed the documents and deem them all suitable for the change in distribution to read "Distribution A: Approved for public release; distribution unlimited."
- 3. The point of contact is Adana Eilo, ECBC Security Specialist, (410) 436-2063 or adana.l.eilo.civ@mail.mil.

Encl

Security Manager

- 1. Report on Properties of War Gases, Volume 1, G-Agents (U), Chemical Corps Board, Army Chemical Center, MD, 1956, CONFIDENTIAL Report, (AD-108 456).
- 2. Rueggeberg, W. H. C.; Ginsburg, A. *The Synthesis of MCE, Cyano (Dimethylamino) Ethoxyphosphine Oxide*, Chemical Warfare Service Technical Data Memorandum Report 1138, **1945** (ADB968799) Dist. "D"
- 3. Doyle, W. L., et al. *Informal Monthly Progress Report on Toxicity and Irritancy of Chemical Agents, No. N.S.* 3, The University of Chicago Toxicity Laboratory in cooperation with The Medical Division, Chemical Warfare Service, U.S. Army and the Bureau of Medicine and Surgery, U.S. Navy, **1945**. (CBRNIAC-CB-068173) Dist. "E"
- 4. Panariello, V. Monthly Intelligence Report, 40th Chemical Laboratory Company, April **1945**. (HDIAC-2075468) Dist. "E"
- 5. Snyder, Jr., H. L.; Hudgin, D. E.; Schlesinger, A. Captured Material Technical Report #60, New German Chemical Warfare Agent, A Cyano Phosphate, 44th Chemical Laboratory Company, APO 298, US Army, **1945**. (HDIAC-2075719) Dist. "E"
- 6. Reuggeberg, W.H.C. German Agent MCE, Letter Report of Visit to University of Chicago and University of Illinois, Chemical Division, Edgewood Arsenal, MD, **1945**. (CBRNIAC-CB-114805) Dist. "E"
- 7. Samuel, J. B.; Penski, E. C.; Callahan, J. J. Physical Properties of Standard Agents, Candidate Agents, and Related Compounds at Several Temperatures, UNCLASSIFIED Special Publication ARCSL-SP-83015, U.S. Army Chemical Systems Laboratory, Aberdeen Proving Ground, MD, 1983, (ADC033491) Dist. "E"
- 8. Abercrombie, P.L. Physical Property Data Review of Selected Chemical Agents and Related Compounds: Updating Field Manual 3-9 (FM 3-9); ECBC TR-294; U.S. Army Edgewood Chemical Biological Center: Aberdeen Proving Ground, MD, 2003; Report (ADB294480) Dist. "D"
- 9. Chemical Agent Data Sheets, Volume 1, EO-SR-74001, Department of the Army, Headquarters, Edgewood Arsenal, Aberdeen Proving Ground, Maryland, 1974. (CBRNIAC-CB-007206) Dist. C (export controlled)
- 10. War Department Memorandum, Subject: New German Gas, MCE, Preliminary Report, 19 June **1945**. (CBRNIAC-CB-093876)